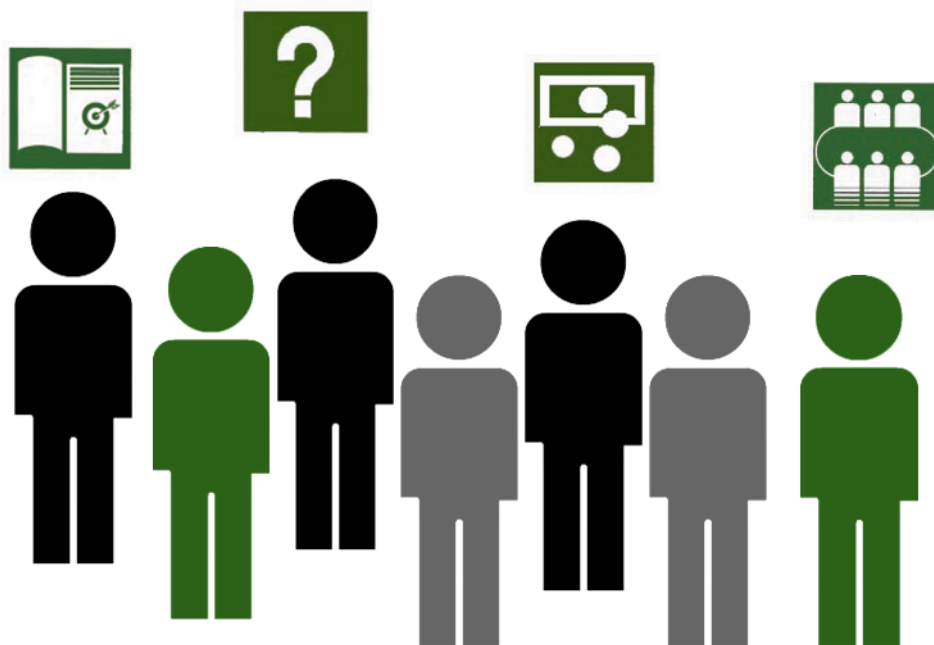


# CHALMERS



## The Process of Change and Green Institutional Entrepreneurs A Human Agency Perspective

*Master of Science Thesis in the Master's Programme Design and Construction  
Project Management*

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CHALMERS UNIVERSITY OF TECHNOLOGY  
Göteborg, Sweden 2010  
Master's Thesis 2010:92



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Cover:

The figure was designed by Iveet Amelia Cordero Vargas and illustrates different aspects that influence green change in the construction sector.

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Sweden 2010



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### ABSTRACT

The notion of sustainability and the mission of environmental management towards sustainable development is the combined outcome from adapting environmental methods and practices. For the construction sector, over the last two decades, there has been a growing pressure to become more aware of environmental issues. Organizations, in order to develop new strategies, recognize institutional entrepreneurs as the one that shapes and change organizations. Hence, academia and companies have pointed out the importance of human resources in the process of organizational change. However, a lack of research and recognition of the link among organizations and human resources has been identified. As a result, Julie Battilana has developed a model that explains the role of individuals and where institutional entrepreneurs and their social position perform to achieve divergent organizational change. In this thesis, the process of change is scrutinized by the notion of institutional entrepreneurs and its involvement to motivate and perform as role model. The research of this thesis starts with a literature review of neo-institutional theories. Actors' classification and role is carried out based on their involvement during a change process as *Formulators, mediators, Executors and environmental supporters*. After setting the context and actors', the research tests the model of *The Enabling Role of Individuals* model developed by Battilana. Conditions to perform as institutional entrepreneur are tested on a multi-level organizational approach. Findings highlight the correlation for achieving a green change and building a green competence is highly connected to the human agency interaction. Finally, the importance of a "common shared meaning", informal networks and the implementation of green strategy requires human agency and social interaction connected with socio-emotional interactions and carried out during day- to- day practices.

*Key words: institutional entrepreneurs, human agency, green change, Swedish Construction Sector.*



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## Acknowledge

This Master thesis is the outcome from two full adrenaline years as International Master's student. It strives to reflect our commitment and involvement during January to June 2010, for completing our studies. We want to express our gratitude to the people who have contributed with their comments, feedbacks, support and mainly helping us verbalizing our ideas into clear text.

First and foremost we would like to thank to our supervisor Pernilla Gluch for her constant involvement during this thesis. Her valuable comments have contributed in an extraordinary manner during the research methods to improve the final outcome of this thesis, and mostly to challenge ourselves for carrying out a better work.

We would also like to thank to Kristina Gabriellii for providing us a kind opportunity as International students to study PEAB. Hopefully, we expect that this thesis might contribute for achieving a greener company based on the employees' competence. Also we would like to thank all our interviewees, without their commitment, experiences and willingness to share information this thesis might not be possible. Every story has contributed to the entire process for studying and writing this thesis. Many thanks also to Fatemeh Ehsanifar for her valuable time reading and editing.

Last and the most important, we would like to thank to our parents for all their support, love and encouragement during our life.

Sweden, June 2010

Iveet and Sepehr

## Notations

CEO	Chief Executive Officer
DM	Divisional Manager
DvM	Development Manager
EHS	Environmental Health and Safety
EMS	Environmental Management System
IE	Institutional Entrepreneurs
OPC	Operational Production Coach
PM	Project Manager
QH&SC	Quality, Health and Safety Coach
RM	Regional Manager





# 1 Introduction

## 1.1 Background

In recent years organizations are getting more globalized. Local markets have been changed to international ones and the number of competitors in different organizational fields has increased massively (Rothwell et al., 2009). Consequently, organizations are forced to change in order to maintain their competitiveness in the market place. To survive in a competitive market, organizations try to be sustainable. Sustainability depends on resources, tools application and competitive dynamics (Al-Sedairy, 2001). Organizations succeed according to their ability to manage resources and achieving a competitive advantage (Fernández et al., 2003)

Adopting environmental methods is a key issue for becoming sustainable in global competitive market undertaken by organizations (Gluch, 2009). Over the last decade, there has been a growing pressure on western companies to become more aware of environmental issues. Leading forces such as green consumers, insurance companies and green investors demand companies to be aware of the strategic importance of environmental issues (Azzone and Bertelè, 1994). Therefore, companies start to change in different ways to improve the environment. In fact, green change has been defined as “green” strategy where the competitive advantage is based on adapting environmental methods as a key for being sustainable (Olson, 2008).

Implementing a green strategy in a company can complete the business, operations, and asset strategies of the company which are already institutionalized and normally well implemented by the individuals. Possessing a green strategy fundamentally helps organizations make decisions which have a positive impact on the environment. A green strategy encourages common beliefs and awareness among employees. Companies should work to make environmental practices as part of individuals’ day-to-day practices (Olson, 2008). For instance, Füssel and George (2000) identified that environmental practices are embedded in action, practices and structures involving individuals for their achievement. Therefore, several authors have pointed out the opportunity of applying the emergent environmental strategies in the green change implementation.

Individuals in a company have different incentives to maintain or modify the existing structures (Battilana, 2006). The development of strategies is mostly driven by economic incentives influencing a competitive advantage. Actors who contribute with new and innovative strategies are called institutional entrepreneurs (Raghu et al., 2007). Consequently, actors who work to establish the environmental practices as day-to-day practices are called green institutional entrepreneurs. Therefore, the recognition of the green institutional entrepreneurs is necessary when implementing green strategies and changing institutionalized practices.

The construction sector is one of the main contributors to environmental problems. Most of the resources and materials on the construction site are non-recyclable and in some cases they affect the environment (Tam et al., 2004). In the last two decades the construction sector has put much effort to create environmental strategies, developed and implemented environmental tools. For instance, in Sweden 70% of the construction companies have Environmental Management Systems (Gluch and Räsänen, 2009). Furthermore, Swedish companies believe in environmental management as one of the main issues in their organizational mission.



Several authors have pointed out the importance of human resources in the process of organizational change as enablers or as defenders (Fernández et al., 2003). Therefore, there is a need for research to recognize the link between organizations and human resources in order to make organizations sustainable (Fernández et al., 2003). Neo-institutional theories explain how actors influence institutions and possibly change institutions (Battilana et al., 2009). Institutional and neo-institutional theories bring out the role of actors (individuals/ groups) in organizational divergent change (Battilana, 2006).

The actors in organizations as human agencies can contribute to change the organizational practices. Actors determine institutional roles in spite of pressures towards stasis (Battilana et al., 2009). Institutional entrepreneurs are defined as actors who lead up changes of the existing institutional environment or create alternative roles (Battilana et al., 2009; Rothenberg, 2007). According to DiMaggio, institutional entrepreneurs are individuals who have the willingness to transform the status quo and at the same time mobilize resources for creating and changing new institutional logics (divergent organizational change). Institutional entrepreneurs (IE) have been presented as a promising way to facilitate an endogenously (internal) change. Strategies can be implemented more easily if these actors are identified in the early stages of a change. A set of different conditions guarantees that Institutional entrepreneurs (IE) might act as leaders for changing the taken-for-granted practices (Battilana, 2006).

## **1.2 Battilana's model**

In order to develop a new strategy, organizations may recognize institutional entrepreneurs. Battilana has developed a model to explain the role of individuals and their social position in divergent organizational change (Battilana, 2006). Hence, Institutional entrepreneurs are main actors in a change process. Battilana's model, *"The Enabling Role of Individuals"*, highlights the conditions for enabling roles in an individual level based on actors' social position. The model explores how, during the process of divergent organizational change, institutional entrepreneurs are engaged.

Battilana's model complements the work carried out by neo-institutional researchers. The aim of her work has been to develop a model empirically testable. The results highly depend on the degree of maturity of the organization. In matured organizations, individuals' social position is identified as a variable factor to establish certain conditions and engages as institutional entrepreneurship (Battilana, 2006). In addition, the model also unfolds the enabling conditions for institutional entrepreneurs by the following six propositions (Battilana, 2006) :

- 1) Organizations with lower social status are more likely to conduct organizational changes rather than higher social status organizations.
- 2) Individuals who belong to lower social status are more eager to initiate the change depending on their degree of dissatisfaction, rather than the individuals with higher social status.
- 3) Individuals with lower social positions are more likely to conduct the change if they have strong ties with individuals in higher social position.
- 4) Individuals in higher hierarchal situation are good enablers to conduct the change, due to their willingness and access to resources.
- 5) The individuals with higher inter-organizational mobility are more likely to conduct the change.
- 6) Individuals with an intermediate duration of tenure in their organization position are more likely to conduct the change.

### **1.3 Purpose**

The intention of this research is to test Battilana's six propositions in PEAB. The model was applied to recognize institutional entrepreneurs during an on-going green change process.

Propositions 1 and 6 are not tested. PEAB's current status among its competitors within the Swedish Construction Sector is not considered in the scope of the research, which makes proposition 1 irrelevant. The reasons to exclude this information was based on the contradiction among quantitative data of local and international performance, number and size of projects, turnovers in a qualitative approach related to the human agency and the role of the actors, where the correlation is not clear. In addition, the pre biased existing ideas and ranks about market might affect results.

Due to the intermediate duration of tenure in organization position Proposition 6 was not explored either. The relatively small sample of 12 interviewees is not sufficient to test the proposition for the entire West Division of 900 employees. Findings would not be objective, since it also involves quantitative aspects related to the number of total population and their duration of tenure with their organization position.

The main outcome of testing this model is to explore the importance of individuals in shaping institutions by the exploration of the human interactions. By studying propositions 2, 3, 4 and 5, the process of change, resources, dynamics and strategies would be recognized. The thesis attempts to reveal the role of actors in a green change process by presenting the notion of institutional entrepreneurs in PEAB. The research is carried out from an environmental perspective where individuals are constantly involved in green change process. The results declare main actors who affect green change implementation and their social dynamics in PEAB.

One outcome of this research is to provide information for managerial decisions. More, it illustrates situations where actors can be recognized as green institutional entrepreneurs and implement green strategies. Consequently, the analysis is able to identify hierarchal positions and networks where Top Management should focus for developing green strategies. Finally, it presents possible means for institutional entrepreneurs to use during on-going green change.

To fulfill these aims, this research unfolds the following:

- *It explores institutional entrepreneurs' role for a green change (policy).*
- *It classifies enablers and filters for a green change process and it determines where in the organization most focus should be made.*
- *It explores the social dynamics of sharing environmental knowledge for building a common shared meaning in an organization.*
- *It scrutinizes the likelihood where institutional entrepreneurs emerge.*

## 2 Methodology

In this chapter, the overall research approach is described (*See Figure 1*). The choice of research method is based Silverman (2000) and Kvale (2008). A qualitative research approach is applied in a case study providing a deep understanding of a specific social phenomenon related to the importance of human agency for divergent organizational change. Literature, interviews and field observations are the main data collection source. Data collection is analyzed, discussed for interpretation and reported.

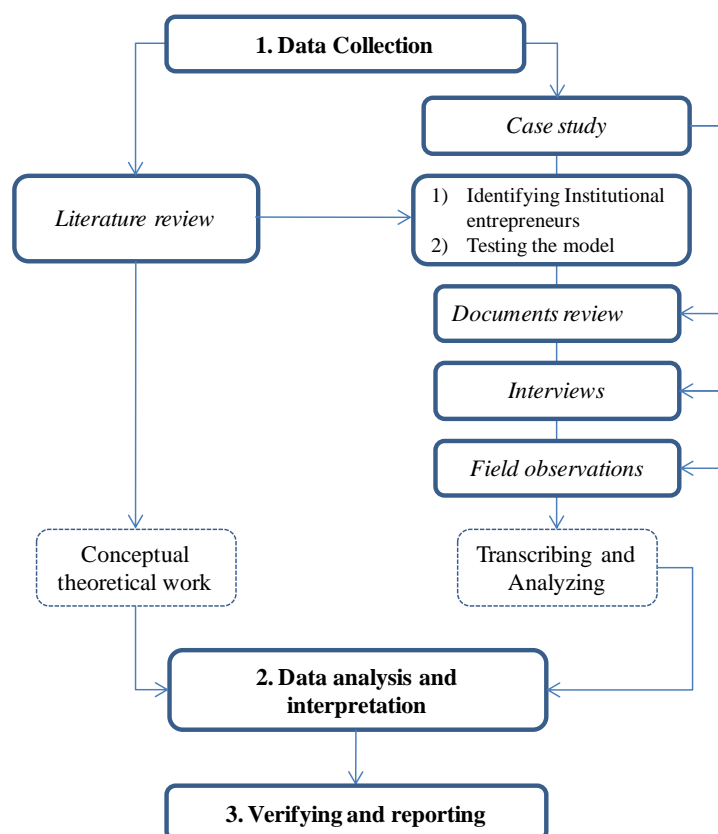


Figure 1 Illustrates the qualitative methods applied in the case study modified from (Silverman, 2004) and (Kvale, 2008)

### 2.1 Qualitative research

Bryman (2004) suggested the use of language as the most useful approach to understand actors' meanings and experiences. Hence, a qualitative research was preferred in this study since it made it possible to identify institutional entrepreneurs and unfold the concept of human agency embedded in the organizations (Battilana, 2006). However, organizations are supported by the institutional entrepreneurs' discovered opportunities exploring the conditions and processes required to implement a divergent change. Consequently, institutional entrepreneurs would act as bridges between higher and lower levels and eliminate the taken-for-granted practices.

The research is developed by analyzing actors' experiences gained in their day –to-day through social interactions and simultaneously they are constrained by their contexts. In other words, the study scrutinizes by “seeing through the eyes of participants in research process” (Bryman, 2004). The main constrain in relation to

individuals shaping their own reality is highly affected by the organizational context. According to Bryman (2004), individuals tend to act or inhibit members behavior, therefore the study is based on “interpretivism”. It aims to explain and understand the human behavior, developed by Weber (Bryman, 2004).

By combining Silverman (2000) and Kvale (2008) the research process was divided into three main stages; (1) data collection, (2) analysis and interpretation, and finally (3) validation report by the interviewees (*See Figure 1*). Firstly, data collection helped formulate research questions and structure the theoretical framework. This stage answered the why, what, and how questions. Later, the analysis and interpretation stage balanced the interviews’ findings with the theoretical framework in order to come up with some conclusions. Finally, the validation stage strived to include authorized interviewees’ narratives and theories (Bryman, 2004) as part of stories process for a reliable research.

## **2.2 Data collection**

Yin (2003) suggests for qualitative research that data collection should be based on different sources. Therefore the application of various types of resources is highly recommended. Consequently, a good research work would require the use of multiple sources (Yin, 2003). This thesis is based on a data collection of the following different sources: literature review, case study, company documents review, interviews and field observations.

### **2.2.1 Literature review**

The literature review in qualitative research can be used to clarify and gather the theoretical support, to formulate research questions and selection of case study or come up with new ideas throughout the study (Johnson and Christensen, 2007). The literature review analyzed the development of institutional theories and strived to identify differences within neo-institutional theories. The literature review supported the reasons for testing Battilana’s model specifically in the construction sector.

In this case, by searching on-line journals in Chalmers library and examining related references, several articles were gathered and reviewed. The search was based on several keywords such as; Institutional entrepreneurs, paradox of embedded agencies, neo-institutional theories, and human agency. The literature review mainly focused on articles which explained the concepts of neo-institutional theory such as “*institutional entrepreneurs*” and their development over time. Also several articles related to the role of institutional entrepreneurs for supporting the change in their institutions were reviewed.

In addition two articles suggested by our supervisor were integrated: “*Agency and institutions: The enabling role of individuals’ social position*” Battilana (2006) and “*Unfolding roles and identities in construction projects: Exploring the informality practices*” Gluch (2009). Both articles supported DiMaggio’s and Bourdeiu’s theories of the importance of the individual’s social position. During the research process, not only social positions were analyzed, in fact for testing the model other aspects such as field characteristics, hierarchical position and organization inter-mobility were considered (Battilana, 2006).

### **2.2.2 The case study**

The aim of this research is to test the model on a construction company. Consequently, the study explores the conditions where institutional entrepreneurs emerge and use their human agency for implementing green strategy.

PEAB was established 50 years ago as a family business. It is a large company, with more than 13,000 employees in the Nordic countries. That makes PEAB one of the largest construction companies in Sweden. It has a flat organization meaning that it is decentralized with short decision making paths and highly empowered employees to increase responsibilities (PEAB, 2009b).

One of the main competences for PEAB is to offer and supply total quality in all the stages of the construction processes. Hence, employees need to have a high level of professional skills contributing to innovative solutions. The business principle is to support, develop and supply good quality products that create mutual trust with customers. The main commitment in PEAB is to contribute for a sustainable development. The company is therefore striving to achieve and to build a green competence to improve its environmental profile influenced by customer's demands, competitors and legislation. "*Building for the future*" is the most important concern in PEAB (PEAB, 2009a).

### **2.2.3 Company documents review**

These documents presented a general overview of PEAB and were gathered to provide background information. Company documents described in detail the company concept, organizational structures, common practices and routines. Indeed, several authors (eg. Bryman and Yin) considered this type of data as stable, reliable and what is more, with an advantage of being constantly reviewed. According to Yin, company documents reinforce the data collection stage. The Business Plan is PEAB's guiding document and illustrates some different managerial levels, strategies, and visions.

For this research, documents were used as an additional source of data to obtain a general perspective of the studied organization. As a result, the document review developed an understanding of the current position of the organization within the construction sector, its hierarchical structure, official networks, individual's positions, roles and responsibilities. However, language was a constraint since most of the documents were in Swedish and there were only a few of them in English. This restricted the number of available sources for the researchers.

### **2.2.4 Interviews**

The interviews were focused on the importance of the individual's position, and how individuals according to Julie Battilana's model: "*The Enabling Role of Individuals*" can shape their own contexts. Semi-structured interviews were the main method for gathering data.

#### **2.2.4.1 Interview design**

Bryman (2004) and Battilana (2006) proposed a multi-view approach, meaning that interviews were carried out in all the organizational levels. As a result, the interview is the most extensively data source and it was applied for obtaining experience, examples, and the meaning of contexts.

For the neo-institutional research Meyer and Rowan (1977) considered institutional entrepreneurs as peculiar “*species*”. Interviews could be a powerful method to access various stories about real life and capturing the experiences (Silverman, 2004). Consequently, individuals describe their everyday world enhancing the importance of their human agency and social interactions.

### ***Semi- structured interviews***

Semi-structured interviews assisted the research by focusing on the understanding of everyday world from the subjects’ own point of views. The selection of this structure for interviews was done based on the desire to make the interviewees to describe their situation in own words in everyday world and thus it seeks to cover both a factual and a meaning level (Kvale, 2008).

Interviews were carried out with the following actors:

- 1) Divisional Manager
- 2) Regional Manager
- 3) Project Manager
- 4) Housing Development Manager
- 5) Environmental Manager
- 6) Development Manager
- 7) Quality, Health and Safety Coach
- 8) Site Manager
- 9) PhD student
- 10) Environmental Coordinator
- 11) Quality, Health and Safety Coach
- 12) Operational Production Coach

The interview process was of an open-ended nature and maintained an informal style similar to the everyday conversations. The study protects the identification of the interviewees and gives specific attention to the ethic implication of its personal interaction during the interviews developed by Kvale (2008). All the information is used only for academic purposes.

The interviews explored the main role of the interviewees in accordance to the topic research and their point of views. In this case, the interviewee suggested his/her recommendations and perceptions and suggested other individuals for interviews. Language has been one of the main constraints for the study. Sometimes, during their narratives the interviewees felt uncomfortable on finding the correct expressions or accurate wording to express their ideas. Translations and technical words were exemplified through previous experiences and day to day situations.

#### **2.2.4.2 Interviewing Process**

The aim of the interviews was to help actors to unfold narratives. In collaboration with the Environmental Manager in PEAB, actors related to green strategies were identified for being interviewed. Interviewees respond questions depending on their own experiences and focusing on the narrative of their stories. Eleven of them agreed for a personal interview and one of them answered by email and phone calls. A total of 11 personal interviews were carried out and recorded. Interviews duration varied, being the shortest 30 minutes and the longest 2 hours.

Each interview consisted of four parts:

- ***Part one: Interviewees' background***

This part identified how familiar the interviewee was with the construction sector. Questions concerned their role description, educational background, path career development and work experience. It also focused on employees' perception related to PEAB's position among its competitors.

50% of the interviewees had an inter-organizational mobility with a tenured position of less than 5 years. Thus they have been employed on different areas such as other construction companies, manufacturing industry, municipality, and consultancy firms. As a result, this background combination allowed them to identify new opportunities whilst they were engaged in the present situation. The other 50% of interviewees presented tenure of position from 10 up to 25 years. In fact, these actors are embedded in their context, meaning that these employees are familiar with the institutionalized practices and mostly they are satisfied with their roles and responsibilities.

- ***Part two: Contribution to sustainable development***

After describing their organizational role, the next questions concerned sustainable development and Construction Sector effects on the environment. In fact, it attempted to construct a common concept and vocabulary related to the sustainable development. The sustainable development concept was described in accordance to their day-to-day responsibilities by providing examples.

Hence, interviewees were encouraged to reflect about their role and contribution for achieving sustainable development. Interviewees described their environmental training, tools and methods to cope with environmental issues. In fact, interviewees pointed out the importance of a set of four core values known as JUPP in Swedish or DDPR in English in their day-to-day practices. In addition, interviewees weighted out the utility of this tool for mediating with environmental issues, and finally part asked to the interviewees' environmental perceptions with PEAB's environmental work.

- ***Part three: Drawing a map of their social interactions for environmental work***

This section provided a general understanding about how actors act as either institutional entrepreneurs or institutional defenders. The maps were used as the richest valuable source of data collection. Consequently, it summarized how actors connected their organizational position with their social dynamics to carry out the environmental work. The starting point was connected to the current organizational structure in the Western Division. Each map illustrated how the strategy was communicated in accordance to the Business Plan. Each interviewee visualized internal and external connections, responsibilities and linked them to the main reasons for having an environmental work. The outcome of each map is displayed in Appendix A providing a summarized perception in each organizational level for understanding environmental work.

Drawing network maps allowed the interviewees to explore different roles of the individuals in green divergent organizational change. This made it easier to track roles and practices which have impact on mediating environmental work. According to



Kvale (2008), the early identification of these actors complements the worthiness of the multi-perspective construction based on knowledge and social practices.

- ***Part four: Role description and human agency***

Questions were tailored in accordance to each social position emphasizing the process of divergent change and its implementation of the theoretical framework of neo-institutional theories. Questions were presented by their involvement by implementing a divergent change (green change) with their endeavors to build a green competence in PEAB. This part matched the organizational position and by their access and willingness to mobilize sources.

### **2.2.5 Field observations**

In this research, field observations provide a general overview on the environmental staff's influence on organization. During the research site visits at two construction projects were done. Through these visits, the most tangible and common environmental tasks were recognized: sorting waste, implementing logistic programs, and new technologies for energy use. Also it explored how employees on site handled environmental efforts into day-to-day-practices. Both projects are located in Göteborg. In Project (1) an educational building located in Lindholmen, the customer demands strict environmental work management in the construction process. Interviews with Site Manager and a PhD Industrial student were carried out. Project (2) is a project hotel refurbishment located next to Central Station. In contrast, the customer does not demand for environmental work, but "winning any kind of environmental award" is the main goal. Interview with Quality, Health and Safety Coach (2) was carried out.

## **2.3 Transcribing and analyzing**

For a closer analysis, transcription of the interviews was done in order to identify keywords, examples, and personal narratives. During the transcription process, we focused on non visible communication messages and the meaning of their unfolding stories. Each interview was transcribed as much as similar to the original recorder tape. The results from transcription improved the interview method. After transforming the oral language to written type, the transcription was sent back to their interviewees for validation. This process allowed the interviews to clarify the main meaning, stories and complement the information through their useful feedbacks and comments.

## **2.4 Reliability and validity of the study**

Reliability in the research process refers to the conformity and dependability of the research results. The reliability is related to the transcription and analysis of interviews, and referring to those different analyzers got the same results. In contrast, supporting Kvale (2008) the validation focuses on the quality of interview findings and on practical effects of findings.

Several techniques have been carried out to test and verify findings, such as checking the researcher's effect on the analysis, checking the meaning of the statements, and getting feedback from the interviewees. The phrases and the concepts applied in the results have been checked by discussing them with different individuals in the studied organization. Hence, theorizing can be a tool to validate findings. In this case, the research was built on data sources generated by the actors which might act as institutional entrepreneurs implementing the green change.

As researchers we tried to present a critical view on institutional entrepreneurs. Findings and their analysis were compared with literature and the concepts and the explanations used in the analysis for validation. Thus, the research came up with honest and strength of statements formulated by theory and findings.

### **3 Theoretical frame**

This chapter presents the theoretical framework. The framework is based on the application of neo-institutional theories where human agency is presented as the essential idea for shaping organizations. It presents the notion of institutional entrepreneurship and its role in divergent organizational change. This section tends to connect neo-institutional theories unfolding the meanings of environmental work in the construction sector.

#### **3.1 Institutional and Neo-institutional theories comparison**

Institutional theory has become a well-known and effective theory to explain individual and organizational actions (Dacin et al., 2002). Scott (1987) defines institutions as social structures explained by a high degree of flexibility. Institutional theory analyzes the impact of social and cultural pressures on organizational field and managerial decisions. Institutional theories focus on the effect of institutional pressures by explaining why organizations adjust the same acceptable structures within their field (Clegg et al., 2005). Institutional theory has explained why actors who recognize opportunities for increasing performance might be indisposed to implement the change. In fact, institutional theory considers more to isomorphism in organizational field rather than organizational diversity and change (Kondra and Hinings, 1998).

Institutional theorists like Meyer, Rowan, and DiMaggio have focused more on the processes which result in institutional stability rather than those that conclude institutional change. In contrast, individuals react to adapt their structures to achieve support and legitimacy. Furthermore, actors are directed to reconstruct beliefs and practices in order to be institutionalized (Battilana et al., 2009). Consequently, if the social institutions stabilize the taken-for-granted rules and gain main power, the organizations and actors would be forced to adjust themselves respectively. However organizations and individuals are main actors for creating new institutions or changing the existing ones (Seo and Creed, 2002). As a result, the role of organizations and actors in institutional change process should be recognized. Also, the mutual relation between actors and institution in change process should be clarified in stabilizing the new rules and strategies.

The main inquiry about how institutions are created and changed over time would be replied by involvement of the human agency's role into the neo-institutional theory (Christensen et al., 1997). The underlying solution emphasizes the agency and its interest which are embedded by institutions (Seo and Creed, 2002). The contradiction among actors and institutional characteristics highlights questions about: How institutions can be changed by the actors whose interests and actions are constructed by the institution? And how it would be possible for organizations and/or individuals to develop institution if their beliefs and interests are shaped by it (Battilana, 2006).

Institutional theorists tend to ignore the individuals' role in institutions. Institutional theories believe in the stability and supporting the legitimacy and taken for granted practices. However, institutions are enclosed in the time and their situation might be changed over time. For this reason, Neo- institutional theory was established. Neo-institutional theory is focused more on the individuals' role in institution and

integrates individual analysis for changing or creating new institutions. *Table 1* compares the main disparities of neo-institutional and institutional approaches.

<b>Institutional</b>	<b>Neo-institutional</b>
Denying the individual's role and focus more on the organizational role	Focusing on organizational role towards individual's role, behavior with a multi level approach for filling the gap between theory and action
Adapt similar practices focused on the processes for striving stability	Integrating individual, organizational and societal analysis for changing or creating new institution.
Support legitimacy and taken for granted practices	Supporting institutional change and institutional entrepreneurship

*Table 1: Comparing institutional and neo-institutional approaches*

Institutional theorists also have dealt less with the human agency phenomena. Therefore the paradox of embedded agency has emerged. A challenge for institutional theory is to analyze the degree of separation of the human agency approach. As a solution, neo-institutional theory recommends to integrate individual, organizational and societal analysis for changing or creating new institution (Battilana, 2006).

### **3.2 Institutional entrepreneurs and divergent organizational change**

DiMaggio (1988) introduced the concept of institutional entrepreneur as actors who come up with divergent change and actively implement these changes. He also introduced institutional entrepreneurs as actors who facilitate changes that support, modify existing, or create new institutions (Battilana et al., 2009) The notion of institutional entrepreneurship is explained as activities of interested individuals on specific institutional structures having access to the resources to construct new institutional structures or transforming the current ones (Raghu et al., 2007).

Individuals' characteristics, their willingness, interests and their ability to act in organizations are varying from one person to another. Individuals who want to act as institutional entrepreneurs should have a particular interest in making the change whilst they have sufficient resources and access to the properties (Battilana, 2006). It means that individuals' characteristics and relations might be an enabling condition in institutional entrepreneurship. As a result, the actor's social position enables them to be institutional entrepreneur (Battilana, 2007). Enabling conditions explain the contradiction between embeddedness of actors and institutional change process (Battilana et al., 2009).

Institutional entrepreneurs can be individuals, group of individuals, organizations, or groups of organizations. They are constrained by their embeddedness which is the tension between institutional habits and human agency (Battilana et al., 2009). Human agency is defined as individuals' ability to follow their interests having influence on their social world by modifying the rules or the diffusion of resources. Human agency highlights the manner that the embedded actor influences the likelihood to be

institutional entrepreneurship. The manner is based on the hierarchical position and social position (Battilana, 2006).

Julie Battilana (2006) compares actors' position in institutions with the Russian dolls model, where actors are embedded in multiple layers of institutional life. They are embedded in organizations which the organizations also are embedded in organizational field. According to this model, two main factors are defined as enablers of institutional entrepreneurs' human agency: 1) Field characteristics, and 2) Actors' social position (*See Figure 2 left side*) (Battilana et al., 2009).

The actors' perception affects the field and the access to sources and properties used to implement the divergent change by institutional entrepreneur. The perspective of change has been described as the transition of exogenous (external) to endogenous (internal) change (Battilana, 2007).

Although field-level conditions, seem to play an important enabling role in institutional entrepreneurship, all actors embedded in the same field are not equally likely to act as institutional entrepreneurs. In the face of a range of field-level factors that encourage institutional entrepreneurship, only some actors will exploit the opportunity to become institutional entrepreneurs. This suggests that specific characteristics of actors might also play an enabling role in institutional entrepreneurship. The characteristics of actors are constructed by their social and organizational position which encloses them (Battilana et al., 2009).

In various organizational fields, different sets of templates, rules and structures define different levels of access, domination over the key resources. This variety of arrangements is the main source of power for some actors in organizational field. The level of access to the resources and control over the decision processes apportion individuals in the organizational field to institutional entrepreneurs and institutional defenders (Battilana, 2006). Institutional defender is defined as an actor who interests in existing institutional situation and present arrangements come up as source of power for him. They are in a favored situation and try to maintain the status quo (Battilana et al., 2009).

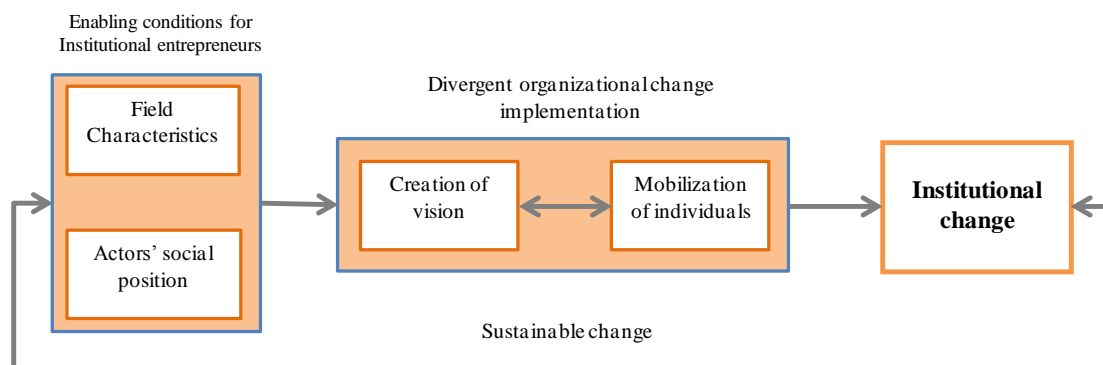
Actors' social position is used as the intermediary between actors' relations and the environment which they are embedded. The actors' social position is constrained by their position in their social groups (informal groups) and also by their position in their organization. The individuals' social position in the organizational field might be a variable subject to finding out how they implement institutional divergent change despite take-for granted institutional structures (Battilana et al., 2009). Formal position in hierarchy structure and informal positions in the organizational networks will affect the willingness of the individuals to conduct divergent organizational change in their organizations or able to do so (Battilana, 2006).

Institutional entrepreneurs' social position as a tool can mobilize individuals to support divergent organizational change (Battilana et al., 2009). Social position plays a critical role as one of the main enabling conditions. And it is not limited only to initiate the change in addition it has to develop divergent change. Actors in lower levels of hierarchical positions can persuade individuals in higher status of social position to approve their project. Strong ties among the higher level of social positions

would let the actors in lower level to overcome the potential resistances and gain the opportunity to access to the key resources and implement the divergent change (Battilana, 2006).

Divergent organizational change in organizations is the combination of the organizational goals transformation and beliefs and norms (D'Aunno et al., 2000). Institutional entrepreneurs are change champions in organizations. They are agents who initiate divergent organizational changes, break the institutional status quo in a field of activity, and transform existing institutions or create new ones. The process of divergent organizational change would be directed by institutional entrepreneurs for implementing institutional change in organizational and/or institutional field (Battilana et al., 2009). *Figure 2* illustrates the process of divergent organizational change performed by institutional entrepreneurs.

The first step for institutional entrepreneurs in the divergent organizational change process is to create a vision which individuals can follow and implement. Creating and developing a vision encloses activities which prepare the structure for implementing change by sharing the vision. The vision provides the followers' necessities for change. In the divergent organizational change process, institutional entrepreneurs should modify existing practices and create a vision which the followers can understand, approve, and finally pursue.



*Figure 2* The process of institutional entrepreneurship in organizational field (Battilana et al., 2009)

In order to modify or create a new institutional structure an institutional entrepreneur should prepare her/himself by being aware of these activities (See *Figure 2*). For change implementation, either changing the existing institutions in the organizations or breaking the existing institutions are challenging processes. A main challenge in this process can be formulating divergent change and mobilizing followers to support the change process. In contrast, the main challenge in change implementation process is to convince institutional defenders (Battilana et al., 2009).

In order to spread out the new vision among different levels of organizations, institutional entrepreneurs should have access to the various formal and informal information networks such as reports, meetings, and mingling etc. For instance, informal communication, as phone calls and spontaneous meetings, facilitates the information exchange easily. On the other hand, formal communication, such as Environmental Management Systems (EMS), web-base project-platforms, written templates and documents can be fully extended as information access tools. In addition, they need to identify key players involved in the divergent change process. The identification of *Mediators* and the evaluation of effective communication tools

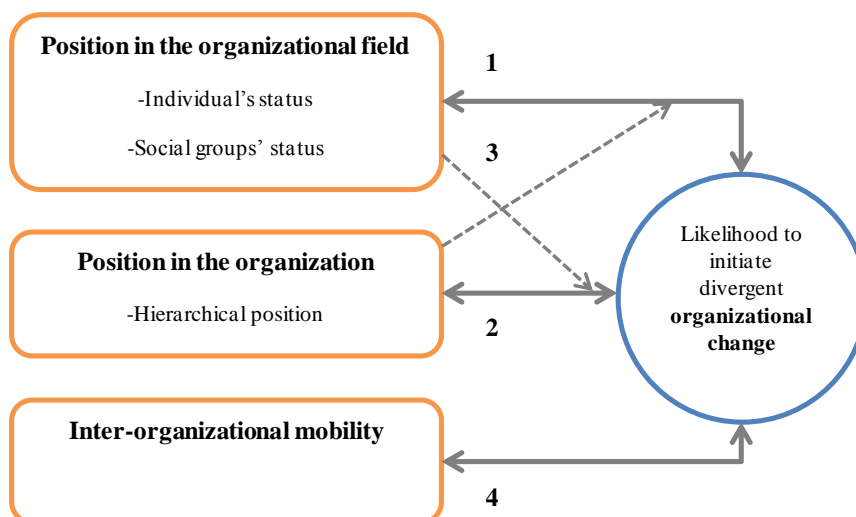
have been recognized as a promissory way to avoid unfruitful communication (Gluch and Räsänen, 2009).

The next step for institutional entrepreneurs in the change process is mobilizing individuals. Mobilizing the followers encompasses activities which assist to institutional entrepreneurs to achieve others' support and approval for new structures. The managerial techniques for mobilizing the individuals include particular social skills to be introduced and communicated the vision to prompt allies. Institutional entrepreneurs can be successful in divergent change process by building the motivational frame when they create the vision and by means of “*rhetorical strategies*”. Based on rhetorical strategies, institutional entrepreneurs can combine their innovations with the common templates to explain easily the necessity of change (Battilana et al., 2009).

### 3.3 A model for enabling change

This section of the theoretical frame unites the concepts of neo-institutional theories mentioned earlier. In fact, it tries to explain the institutional entrepreneurs' role according to Battilana's model: “*The Enabling Role of Individuals*”. This is supported by four connections in the divergent organizational change process. These concepts provide basic knowledge for the reader to understand the model application. With a depth approach, individuals, context and specific conditions are explored as mechanisms necessary to initiate divergent change. For this research, divergent organizational change is described as green change, for this reason some environmental definitions are included.

The model illustrated in *Figure 3* develops the impact of different aspects of actors' social position on their likelihood of implementing divergent change. A multi-level approach based on individuals' social position contains their position in the organization and social groups in the organization. This model also considers the position (organizational and social groups) status within an organizational field and inter-organizational mobility of actors (Battilana, 2007).



*Figure 3* Different aspects of actors' social position on their likelihood that they implement divergent change (Battilana, 2007)

Studies have exposed that organizations in the organizational fields are divided into low and high status organizations. In order to study the role of organization on the actors' likelihood to initiate divergent organizational change, Battilana's model tries to analyze low and high status organizations separately. The presented links (1 to 4) in the *Figure 3* are based on the Battilana's model and described as follows:

**Link (1)** focuses on individuals with low status in the organizations. According to the theory they are more eager to alter the existing institutional arrangements. Low status individuals or social groups are not in a well-embedded situation. They are more likely to modify the existing situation offering new structures to implement the divergent change. In contrast, high status organizations or social groups are interested in the present situation (Battilana, 2007). They have more incentives to adjust the status quo due to their lower level of satisfaction (Battilana, 2007). This theoretical statement supports the *Proposition 2* in Battilana's model. For this study, actors in low status of organizations are not considered, however the study explores the role of the low social groups for the change implementation. Described in detail as *enablers* or *filters* in the following section of *Results*.

**Link (2)** focuses on the control and authorities in initiating divergent organizational change. Individuals in a high level of organizational hierarchy are responsible for initiating change. In contrast individuals in lower levels of hierarchical structure have no sufficient access to the resources required to implement the divergent organizational change (Battilana, 2007). In fact, due to the hierarchical structure actors in higher level have more capability to mobilize the resources to initiate divergent change. According to their access to sources and hierarchical position, the study tries to recognize the conditions where institutional entrepreneurs are good enablers to initiate the change (Battilana, 2006). This theoretical statement supports *Proposition 4* in Battilana's model.

**Link (3)** complements *Proposition 2* based on the characteristic of social position and its effect on the individuals' likelihood to initiate divergent organizational change. In addition, two other relations are described. Firstly, individuals who appertain to low status organizations and who state in higher positions in hierarchical structures are more ambitious to implement divergent change. On the other hand, individuals of lower social groups who are in higher position in hierarchical structure are more likely to implement divergent organizational change (Battilana, 2007). Both theoretical statements support *Proposition 3* in Battilana's model. Hence, the study explores the connection of the human agency by social interaction and hierarchical connections in divergent organizational change.

**Link (4)** illustrates how actors in higher levels with more inter-organizational mobility are aware of the existing opportunities for action in their organizational field whilst they provide experiences in organizational context (Battilana, 2007). The higher the actors' level of inter-organizational mobility are more likely to initiate divergent organizational change (Battilana, 2006). Accordingly, they are able to oversee opportunities and reduce the acceptance of take-for-granted practices in their current organization. For this reason institutional entrepreneurs are analyzed in accordance to their inter-organizational mobility allowing them to



identify opportunities and shortcomings. This theoretical statement supports *Proposition 5* in Battilana's model.

### 3.4 Green construction in Sweden

In recent years being green and sustainable has been introduced as a new vision for the construction sector. Environmental Management has been the promissory way for reaching this new vision (Rothenberg, 2007). Environmental Management Systems (EMS) are designed for stable organizational structures and is in the construction sector the most used tool for carrying out the environmental work (Gluch and Räisänen, 2009). However, Environmental Staff is overseen as the role where institutional entrepreneur can emerge in organizations within the construction sector (Fernández et al., 2003). For motivating individuals in the change process, the key players should be motivated in accordance of their interest meaning that they can act as either as protagonists or antagonists (Battilana et al., 2009).

In the construction sector, motivation is highly dependable on their *Executors* and in their enthusiasm and ability to deal with environmental issues (Gluch and Räisänen, 2009). Research in the Swedish Construction Sector points out that Environmental practices are constrained by organizational settings and consequently, in most of the cases, are not handled in a correct manner (Gluch et al., 2006). In Sweden, environmental issues play an important role therefore special considerations have been taken into account in construction research. Findings have pointed out that construction projects deal with environmental issues depending on the level of legitimacy and its practice acceptance, which are connected to socio-cultural communication processes that create meaning and understanding for the practitioners, and finally take into consideration the ability for being handled and integrated in their work practices (Gluch et al., 2006).

Kolk (2000) attributed the connection between business and environmental protection, as the compatibility between the economic developments without compromising the existing natural resources. As a result, the notion of sustainability and the mission of environmental management to sustainable development is the result of demanded application of proper tools and methods for improving environmental practices across all sectors including construction (Shen and Tam, 2002).

Reinhardt (1999) states for increasing environmental competence managers should take an active role in making environmental decision as what they do in relation to business decisions. As a consequence, environmental problems can be analyzed as business problems and which their solutions are based on innovation. In his findings, Reinhardt pointed out the economic benefits will not be arisen immediately. Indeed it is a long term investment. In addition, Reinhardt (1999) had framed when it really pays to be green, and in which situations the environmental issues are integrated in business strategy. Environmental issues in business strategy fulfill stakeholder's demands and simultaneously cover the environmental responsibilities. In fact, Reinhardt stated that investing on environmental issues should be as important as other business investments. Even if, the investment return is done over long periods.

Moreover, Kolk (2000) classifies environmental work not only as industrial performance but also as a part of social responsibility with the triple bottom line. Several authors also suggest that environmental problems need to be treated as a social responsibility, and environmental practice should not be considered as an extra

cost to be paid in order to achieve sustainability. Furthermore, it is pointed out that environmental problems need to be weighted with a high priority during the construction phases. They should not to be classified as an extra burden in the construction process (Gluch, 2004).

Nevertheless, there are different approaches, environmental management demands a strong academic and industrial background to recognize problems and come up possible solutions. Hence, Kolk (2000) further recognized that industries strive to create win-win situations through the combination of economic and environment. Several drivers influence the environmental performance such as business nature, profitability, legislation, location and stakeholders' interests (Kolk, 2000).

## 4 Results

This section presents PEAB as case study with its environmental practice and efforts to develop a green practice and competence. Top Management has comprised green policies in the Business Plan, however written policies do not guarantee implementation for this reason the creation of common understanding and identifying overcoming resistant to change allow actors to create new strategies for each organizational level. A human agency classification of the main actors is done in accordance to their social position, willingness and access to resources for implementing the green change by the creation of alliances and unfolding their narratives during the process of change.

### 4.1 About PEAB

PEAB was established 50 years ago as a family business. The main difference between PEAB and its competitors, such as NCC, Skanska and JM, is the presence and influence of its founder *Mats Paulsson*. He is in the Top Management Board and his decisions affect the organizational structure, behaviors and decision making paths. PEAB is a large company, although in its 13,000 employees' mind it is perceived as a small company. As a result, PEAB is considered as a decentralized organization characterized by short and fast decision making paths, involving employees in the whole processes (PEAB, 2009b).

One of the main competences for PEAB is to offer and supply total quality in all the stages of the construction processes (PEAB, 2009b). Hence, employees need to have a high level of professional skills for providing innovative solutions. The business principle is to support, develop and supply products which enhance mutual trust with customers. A commitment in PEAB is to contribute to a sustainable development. "*Building for the future*" is of most important concern for PEAB (PEAB, 2009a). According to the CEO Mats Paulsson, during 2008, the Executive Management has faced a great number of positive financial and organizational changes. In a recession situation, PEAB took advantage of new opportunities to make strategic investments supported by their Business Development Plan (PEAB, 2009b).

The general aim of the Business Plan is to achieve tangible results with monetary incomes in all organizational levels. The application of this Plan allows satisfying customer's requirements, creating products with added value and building a competence that differentiates it among their competitors. As a result, PEAB's position among its competitors has been improved positioning PEAB in a leading position in Sweden.

According to the Western Divisional Manager an increasing number of customers are demanding for environmental work, certificates, and quality systems as fundamental parts of the service. During the last years' influence from city regulations, competitors, organizations, external groups, customers, and legislation, PEAB decided to build a more profound green. This green engagement, for instance, is reflected in PEAB's participation as one of the main sponsors of the Göteborg Award for Sustainable Development. The aim of this award is to encourage and support strategic environmental work taken in international and national levels (GÖTEBORG and AWARD, 2010).

Employees in PEAB believe that there are no bureaucratic processes in their organization and they take part in an expert group that works locally and strengthens

their local competences (PEAB, 2009b). In fact, employees establish a similar degree of engagement to all the projects regardless of size, profits or time frameworks. To become a more homogenous organization, PEAB has developed a model based on four core values (PEAB, 2009a). This model is called “JUPP” in Swedish and translated to “DDPR” for this study, and contains the following:

- *Down-to-earth*: stands for fulfilling and strengthening customer relationships.
- *Developing*: stands for providing equal opportunities for the personal, such as training and career development.
- *Personal*: stands for comprising a good work environment balancing personal and professional interests making PEAB a safe place to work.
- *Reliable*: stands for seeking to develop projects in collaboration with customers and enhancing mutual trust with them.

Several interviewees summarized the DDPR model as “*keep things simple*”. Indeed, it is one of the strongest competitive factors and also stands for what PEAB represents as a construction company. These are the institutional values that guide employees behaviors creating add value by long-term customer’s relationships (PEAB, 2009a).

## **4.2 Environmental work in practice**

PEAB has actively contributed in developing communities and working with a great number of environmental efforts. It holds a leading role in the development of passive houses and public educational facilities (kindergartens). At the beginning of 2010, PEAB restructured their environmental support functions and their environmental responsibility is now in the line organization. Continuous monitoring and modifications enrich the scope of the environmental work. In accordance to the General Description of Environmental Management System (PEAB, 2010), environmental work is included as a part of the company policy since 2003. *Figure 4* illustrates the management process for a constant follow up in the process and highlights the importance of the support functions for achieving satisfied customers, owners and employees.

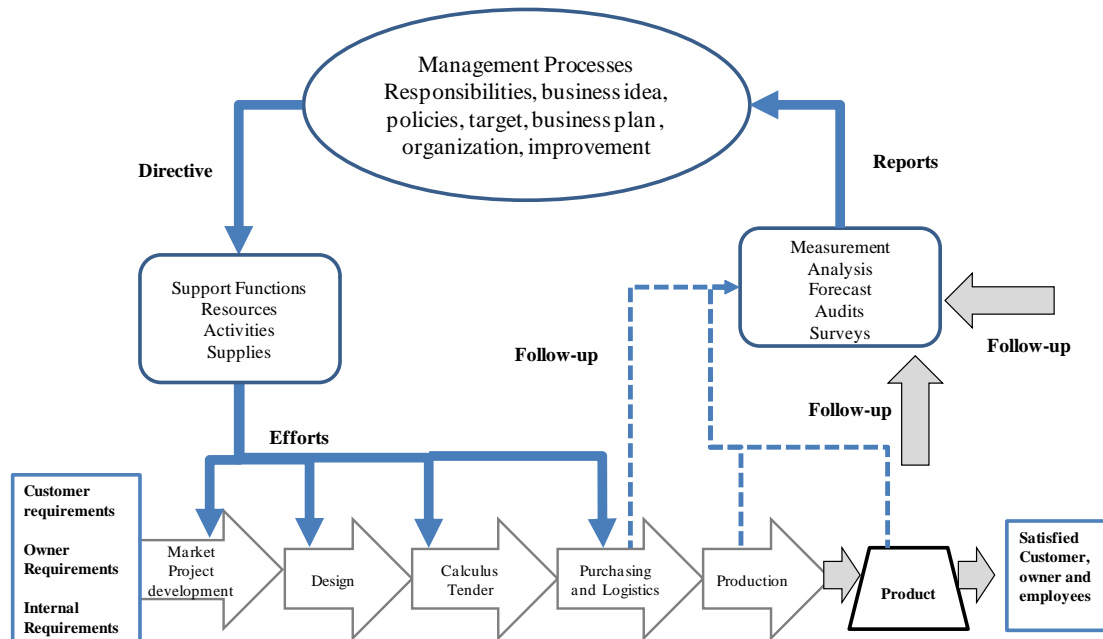


Figure 4 PEAB's Western Division Operation System (PEAB, 2009a)

To increase its green profile, PEAB has a supportive staff with the mission to bind all the pieces together. All the interviewees agreed on describing the Supportive role of Environmental Staff as open-minded, enthusiastic and engaged. Also, employees pointed out that it is the first time that PEAB has a specific staff in charge of these issues. The environmental work is based on individuals' willingness for changing and creating incorporated goals in the Business Plan. PEAB has focused on strengthening their practices and considering sustainability as an integration of social, economical and environmental approaches.

#### 4.2.1 Environmental work tools

When it comes to tools and methods development, PEAB has taken an active role within the construction sector by the application of BASTA System since July 2006. The BASTA system is a guideline for choosing materials by a chemical classification. The most hazardous substances are identified and they are not allowed to apply in construction process (PEAB, 2010). This process is constantly measured and audited. PEAB also participates in the development of Building Supply Assessment (Byggvarubedömningen) based on the entire life cycle of materials (PEAB, 2010). Therefore there is an active contribution in the sector for choosing building materials.

In the most important processes for producing a final outcome (See Figure 4) in house-capability as project development, design, calculus, purchasing and logistic creates the product differentiation are crucial steps. For instance the design process is based on regulations. Thus, all the residential projects are designed to overcome 30-40% less in energy consumptions in comparison to regulation. In fact, this design step is one of where the added value is created and generates profits immediately. Hence, Research and Development for energy consumption is the strongest environmental practice for the West Division. PEAB environmental profile has increased because it involves the product customization by integrating the know-how to fulfill customer's demands

Therefore, knowledge, support and training are required to prevent and to handle emergency situations. Training Development and Education Programs are carried out

in all the organizational levels. These programs are held as a one- day compulsory work shop known as the “Natural Step-System” (PEAB, 2010). Thus, employees are provided with a general environmental knowledge and all the employees should pass the basic environmental test.

#### **4.2.2 Environmental work on site**

During the production step, each construction site is expected to handle on average 70% of waste by sorting and reducing it. Clean sites are supported by cooperation with external waste handling materials companies. Environmental work is a day- to-day practice. The Project Plan measures and minimizes the risks and all the projects have a Production Efficiency Plan aligning goals with the General Business Plan.

Environmental information reaches to the construction site via two manners. The first one is by the hierarchical organizational structure. This communication channel narrows down the different Business Plans (General Business Plan, Divisional-Regional Plan, and Project Plan with specific environmental goals). The other communication channel is informal and more related to the social interactions among the actors.

On site, the message developed by Top Management for environmental work is not very clear. However, there is awareness related to environmental issues. In fact, employees on site stated that they cannot differentiate between what is an environmental policy or not. Such as Site Manager said: *“We do not have this in mind: this is environmental, this is not environmental!”* This sentence encloses a change on behavior based on an unconscious awareness and basic knowledge highly connected as “common sense”.

The Site Manager is responsible for the environmental work, however due to its responsibilities, it is necessary to delegate the environmental work to the Supervisors. Supervisors are the ones in charge of monitoring the execution of the environmental work during the construction phases. In case of some environmental disaster, the Site Manager has to call the Quality, Health and Safety Coach who might provide the best applicable solution, but still the Site Manager has the responsibility.

*Site Manager: “We don’t have time to be greener, it is impossible on site we don’t have time to evaluate the options; we need that someone provides the information for this, we are the Executors”*

The Site Manager believes that for persuading the workers on site, it is necessary to create alliances with individuals that can affect others. It is necessary to share responsibility and make them collaborate. A full understanding about the possible effects and reasons behind this is absolutely necessary for its implementation. It is necessary to work together which means including all the actors involved on site, such as: workers, suppliers and contractors. They should understand that is a shared duty and not a temporary fashion. In addition, education is needed on site; workers need to have for practical solutions rather than theoretical ones.

Although, there is awareness and some small environmental actions are done. Employees on site realized that they do not work that much with environmental issues. They only do the compulsory requests stated in the Project Plan and sometimes environmental work becomes a personal choice. As a result, environmental work is more connected to exploring applicable solutions to what seems to be realistic on a

specific situation. In fact, the Site Manager becomes the promoter of improvements for both mediation manners.

### **4.3 Developing a green company competence**

Top Management and the Environmental Staff explore methods for increasing the green competence in PEAB. Environmental knowledge does not alone provide the correct answers. Nevertheless, it provides tools for making good decisions. The Environmental Staff pointed out that building a green competence is not summarized as the effort to change the world. PEAB is building a green competence based its employees' skills and social interactions between them.

Besides, Top Management relies on that employees are actively working with environmental issues, creating a general awareness. There is a need for communicating PEAB's environmental efforts. All the employees in the Western Divisions had visualized what they are capable to do through knowledge sharing among other divisions and striving for continuous improvement as a whole company. In this case, Environmental Management is considered as one of the most improved areas in the whole PEAB.

The Environmental Manager pointed out that it is costly to invest in education, technology and in rewards for the green implementation. Their investment should be done by human resources as long-term investment. It is necessary to attract individuals interested in environmental work, and also maintain and retain individuals that can raise the green competence. Hence, education provides knowledge and competence for decision-making process in the day-to-day practices.

The Western Division is one of the active divisions working to make the Environmental work a visible practice (PEAB, 2009a). According to the Western Divisional Manager, Business Plan goals can be categorized into long-term and short-term ones. Long-term goals are more related to human resource investment. Individuals with similar values and different backgrounds are hired by PEAB. It is very important to find the correct employees for key support positions in the company. Moreover, short-term goals are strongly connected to the daily task improvements. Design and construction processes strive for the achievement of an eco-efficiency production

Interviewees stressed PEAB's endeavors to strive towards a new green vision for 2014. To achieve this, a group of top managers was selected by the board of PEAB. This group works on the formulation of Green Strategies as a main task. Secondly, they also contribute actively providing support functions during formulation, monitoring and reviewing the process during the implementation phase. Green change is thus constantly evaluated. Initially, it has to be completely accepted in all organizational levels to be implemented. Thus, green change involves individuals and how they shape the organization.

The environmental support staff is responsible for sharing knowledge, training and raising the green competence in the entire organization. Their main challenge is to estate a clear environmental discourse based on knowledge development and education. Consequently, the individuals in the organization get engaged by small steps and therefore the environmental work becomes a shared responsibility. In addition, the environmental supportive staff believes that it is less costly to consider environmental work during the early stages of a project rather than diminish the

negative effects for not paying attention to environmental work after project completion.

### 4.3.1 Creating a common “sense”

According to the Business Plan *Formulators* and *Environmental Supporters* both agreed that common understanding has to be built to avoid different meanings. Hence, environmental information has to be framed differently depending on organizational level. The environmental staff realized that they need different narratives to spread the environmental information. Green common understanding was explained as a tool to encourage individuals to develop their green knowledge in day-to-day practices.

The creation of a common vocabulary enables a common perception. Employees create their own concepts based on their backgrounds and being influenced by their contexts. The creation of awareness is highly connected to individual’s minds. The success for implementation is highly connected to the understanding and acceptance on a personal level and it is not limited to a managerial decision. Indeed, it is a common engagement that combines individuals’ willingness, capacity and enthusiasm by social interaction.

Individuals are wondering how they can contribute with better products and/or efficient processes. In comparison to last ten years, it can generally be stated that individuals have an optimistic point of view about *green change* and also they are much more committed for making a difference. Therefore, they are interested in playing an active role in environmental practices. As a result, the Environmental staff has to link socio-emotional interactions with a common understanding to implement the change. For instance, sustainability is illustrated as a path which can be achieved if everybody contributes by walking together towards the same direction.

*Regional Manager: “It is only a journey that just began, it is a wake-up call, and we are still far from the finish line”.*

*Environmental Coordinator: “It is a path where the goal is at the end, and the journey has to be done backwards by understanding the reason for it and thereafter see the business of it”*

Both quotes reflect the integration of a common understanding, reasons, meanings, and which contributes in a personal level. For this reason, the environmental supportive staff attempts to unfold the meaning of environmental issues on a personal perspective or choice. Finally, this common understanding does according to the Environmental Manager integrate social, economical and environmental implications during the all phases of a project.

Interviewees agreed on that achieving sustainability in the construction sector is the sum of the awareness of the entire sector, regulations and global environmental concerning. There is general awareness that individuals who are involved try to innovate and make small changes. Environmental problems cannot be solved as an isolated problem. Therefore, sustainability is a shared social responsibility. However, it is hard to find a correct solution, because there is no standard solution for environmental problems.



### 4.3.2 Overcoming resistance to change

The interviewees agreed on the existence of conservative practices in the construction sector. Consequently, methods and techniques that provided solutions are just maintained. Thus, there is less room for innovative improvement. Many processes can be improved to be more efficient and eco-friendly. For instance, the application of new technologies allows the improvement of construction processes and therefore the outcome is understood as a technical improvement that will be reflected on monetary profits.

Many companies have followed the trend of “being green”. Consequently, its application is highly connected to marketing policies which improve their image and reputation among competitors. For PEAB, Sustainable development is compromised by the energy use development. Energy use involves all the aspects of environmental work. There are efforts done on materials and chemical selection and waste handling on site during design and construction.

To initiate change, Environmental staff focuses on the individuals who can make a change. Change implementation has to focus on the actors who really are willing to change. In other words, “*individuals who do not desire the change will probably not change*”.

The concept of *green change* can be complicated. According to the Development Manager, in the process of change the critical point is to avoid judgments that previous practices were incorrect and blame responsible actors. Interviewees agreed that “*Solutions done today might not be correct in the future*”. Instead, common understanding has to focus on the aspects that can be performed better and being aware that these practices in the future might be incorrect. For this reason, the Environmental Manager is interested in attracting the most committed people, educating them, and providing them with enough freedom for performing tasks.

The Environmental staff recognized that environmental efforts should not be restricted to environmental work on paper. Rather the opposite, it has to be applicable solutions which individuals should follow. Then, sustainable development can be a day-to-day practice achieved by continuous learning and information sharing. The general awareness among the *Executors* is an undiscovered path but it is a very applicable way for facilitating change

## 4.4 Mediating environmental practices

Findings show a mismatch between talk and action, environmental goals are written down but sometimes they are not achieved. There is also a lack of correlation of Project Goals and Organizational goals. Owing to this, project isolation and duration set the conditions for the actors to mediate environmental practices through the formal networks (hierarchical line) and informal networks.

### 4.4.1 Formal networks

The solid lines in *Figure 5* illustrates the formal hierarchical structure, showing communication of Environmental work comprised as a part of the General Business Plan, as a part of the Quality and Environmental Health and Safety (EHS) policy located in the right part of the chart. The policy is narrowed down according to the different organizational levels following the hierarchical chain of command. The squared dotted lines illustrate the involvement of the supportive staff and their

collaboration in the creation of the Business Plan. Indeed, the General Business Plan includes all the approved practices in PEAB that fulfill customers', owners' and internal demands and the line organization is responsible for goal achievement. Each hierarchical level has the duty to break down the General Business plan into specific Divisional-Regional Business Plans.

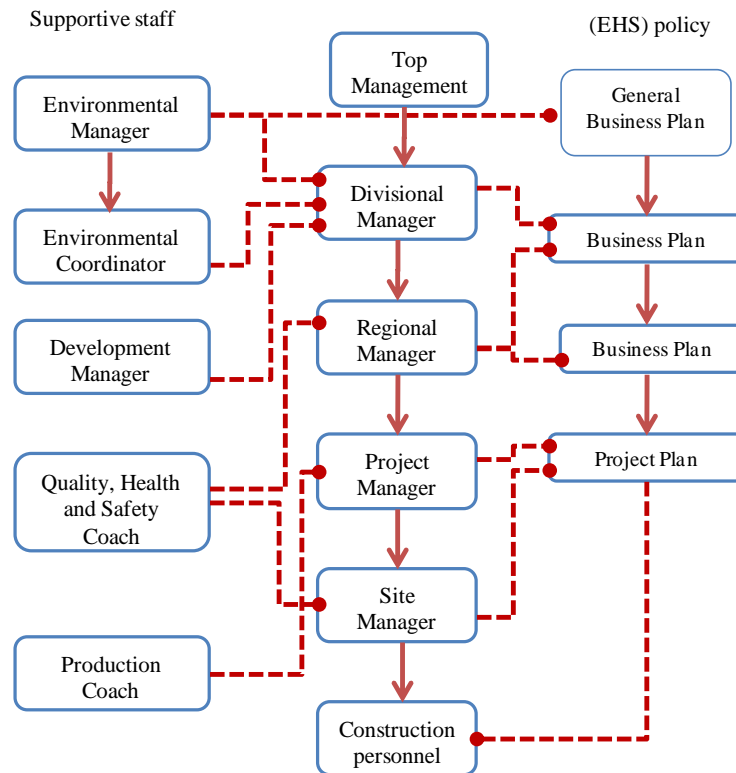


Figure 5 Formal network for environmental work

The central part of *Figure 5* shows how The Top Management and the Divisional Manager (DM) are responsible for the formulation of the business ideas, gathering information, and identifying the requirements for each region in collaboration with six Regional Managers (RMs). Divisional and Regional Managers align the Regional Business Plan according to the General Business Plan. Goals are based on efficiency and productivity. Following the hierarchical line, the next level is the Regional level, with the Regional Manager as the main coordinator and contact person. His/her main duty is to be in charge of coordinating the Project Managers who in turn command the project *Executors* (Site Manager and Construction site personnel). In addition, the Regional Manager coordinates the supportive team working closely with the Quality, Health and Safety Coach (QH&SC). As a result, the Business Plan is communicated as a specific Region Project Plan for each project.

The Project Managers are commanders for the Project Plan implementation, in average each region is formed by five or six Project Managers (PM). Depending on project size an Operational Production Coach (OPC) is assigned for monitoring the production process and ensuring the quality and reliability aspects. However, the Project Manager (PM) is administratively responsible. The Project Plan should be developed in accordance with the General, Divisional, and Regional Business Plans. This document is a guideline containing practices for Risks Analysis, Quality, Environmental Health and Safety (EHS). The Project plan is the outcome of the

collaboration between the Site Manager (SM) and the Quality, Health and Safety Coach (QH&SC) in fulfilling the Project Manager (PM) demands.

For the Project Managers (PM), aligning the Business Goals with Project goals is a challenging task. Their scope of work is to fulfill customer's requirements, plan resources allocation and propose production methods. During the construction phase, there are crucial planning steps. Projects demand a tailored environmental solution and environmental aspects have to be integrated since the Project Plan has been formulated. The Project Manager, Site Manager and Production Coach attend the project kick-off meeting to guarantee their capability for project execution to the customer and suppliers. Then, the next crucial step takes place during the execution phase when the Project Plan is developed by the Site Manager in collaboration with the Quality, Health and Safety Coach. In both steps, Environmental Goals are a shared responsibility of the Site Manager delegating them to the supervisors and whilst the environmental goals are supported technically by the Quality, Health and Safety Coach and administrative by the Project Manager.

However, environmental work is still in a low priority at site being integrated as part of Quality and Production tasks. According to the Project Manager (PM), the rank of priorities and different trade-offs in projects is stated as follows: (1) economic, (2) technical and quality, (3) and environmental.

#### **4.4.2 Informal networks**

*Figure 6* shows on the left side, an organizational structure parallel to the formal hierarchical structure. The figure shows how actors mediate environmental issues in a more informal manner illustrated with thick lines. Most of the interviewees agreed that this informal manner is more efficient, reliable, and easier to handle than the formalized channels. They feel more comfortable to exchange information, make decisions and come up with fast solutions by this way. Informal meetings, previous projects experience, personal bonding, phone calls and spontaneous talk are considered as the most used tools for environmental communication.

Informal networks are considered the most effective manner to spread environmental practices in all the organizational levels. Consequently, the communication is direct instead of following a bureaucratically path that occurs in the hierarchical structure. Informal ways allows carrying out environmental work execution in the day-to-day practice by more practical and faster solutions.

During the site visits, in the *Kuggen* Project there was a clear commitment for working with environmental requirements, since the customer is constantly monitoring the project. For this reason, the Environmental Coordinator, Site Manager and PhD student worked together and share information which did not follow the traditional line of command. In addition, they were supported externally by the Quality, Health and Safety Coach and the Production Coach. In contrast, Post Office Hotel Project had a more active involvement on site of the Quality, Health and Safety Coach taking part of works execution applying environmental issues in the day-to-day practices. Both site visits supported that informal networks were the most useful manner for sharing environmental information.

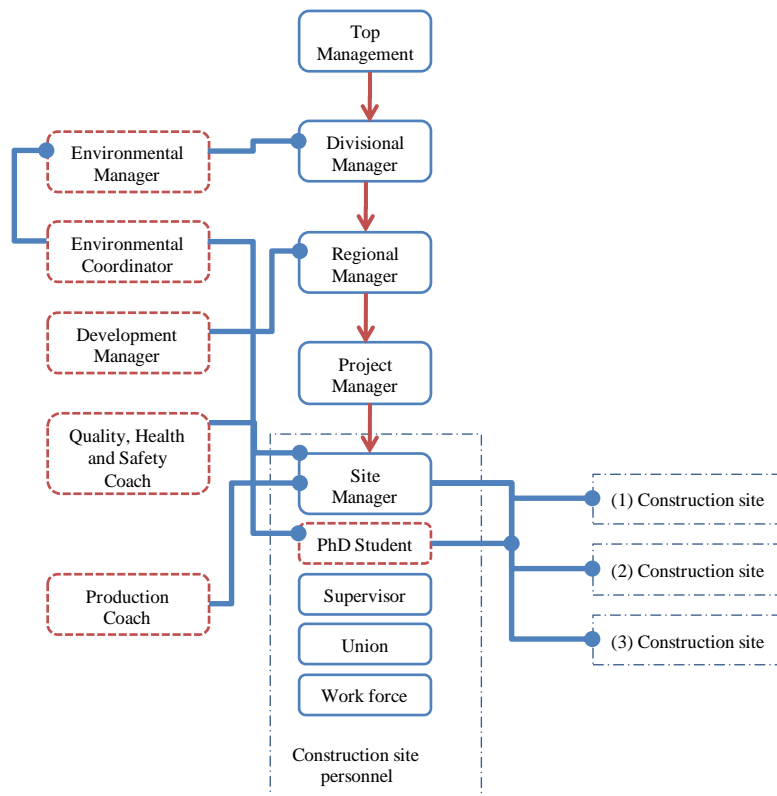


Figure 6 Informal communication networks during the construction phase

The Site Manager emphasized that using informal ways to exchange information was faster and easier. Firstly, employees on site were more familiar with the supportive staff from previous projects. There was a mutual trust between parties developed by social dynamics. They were open to share information directly based on previous experiences and collaboration strengthened by social ties. These dynamics supported the discussion and implementation of different solutions which improved the product or process. However this way of communication is not distinct and takes longer time when institutionalizing environmental practices.

#### 4.5 A green human agency classification and analysis

This section presents actors who are in a possible position to change and/or defend current practices. The actors were classified in accordance with their implication of the human green agency.

The analysis is developed in accordance with the individuals' inter-organizational mobility (background) which means the tenure in their current position, their familiarity with the construction sector and if they were new-comers in PEAB. Social position refers to the hierarchical visibility and willingness to enclose their personal reasons to support or defend practices, connecting their social position with the access to sources. Finally, the analysis followed-up and evaluated the informal communication paths.

The outcome of the classification is a recognition of roles where institutional entrepreneurs can emerge. A human agency perspective allowed us to classify actors in four main groups: *Formulators* (F), *Mediators* (M), *Executors* (E) and *Environmental Supporters* (ES).

### 4.5.1 Formulators (F)

The main actors in this group were: Top Management, Divisional Manager (DM), Regional Manager (RM) and Development Manager (DvM).

- *Top Management* establishes business goals as institutionalized practices and guides principles to maintain the status quo of PEAB.
- *Divisional Managers* are in charge of environmental efforts in the Western Division.
- *Regional Managers* are the business generator responsible for fulfilling customer's demands.
- *Development Managers* have a key role for long term strategies. In their position, they connect the formal and/or informal networks to communicate the environmental work.

These actors were visible in the whole organization. They created and formulated visions and mobilized sources for organization accomplishment. *Formulators'* main task was to align business problems and create visions to fulfill internal and external demands. For this group, environmental work was considered a demand established by customers, competitors, legislation, and global environmental awareness.

*Formulators* spread out their ideas through the Business Plan, increasing PEAB's market value by being recognized as a green construction company. In short, they identified the aspects for building a green competence. They strived to make PEAB a synonym of quality.

### 4.5.2 Mediators (M):

The main actors in this group were: Project Manager (PM), Quality, Health and Safety Coach (QH&SC), and Operational Production Coach (OPC).

- *Project Managers* have access to sources, such as administrative and technical. They also control the allocation of sources for completing projects in accordance with the Business Plan. Project Managers in most of the cases did not possess an environmental education. The interviewed agreed that green change implementation can be achieved if the Project Manager is persuaded for spreading environmental work by its line of command such as the Site Manager. The Project Managers has a key role that connects *Formulators* with *Executors* when implementing new visions and change processes.
- *The Quality, Health and Safety Coach* is part of the supportive staff. In their role, they collaborate with the Site Manager and Project Manager during the work execution and during the Project Plan formulation. Simultaneously, they assist the Regional Manager for strategic development and project updated in accordance to the EHS policy. In addition, this role monitors the institutionalized practices as routines which prevent and handle disasters during the construction phase.
- *Operational Production Coach* is also in a supportive role. Their involvement is highly dependable on the project size. Their main task is to facilitate manufacturing phases and strive for a high-quality product an efficient process.

*Mediators* have a highly visible position and authority during the implementation of the Business Plan and Environmental project goals. The *Mediators* are mostly motivated by economic rewards, productivity and customer's reliance. For instance, this role argues that solutions and tools should be developed in order to fulfill the current needs on site. During our site visits, tailored examples of environmental practices were shown such as the use of mattresses for machinery oil spills. There was no written policy for this regulation but based on previous experiences this effective solution was implemented. As a result, environmental tools, methods, information, and knowledge have to match with the real needs on the construction site otherwise they were seen as useless.

On the construction site, there was a tendency to solve problems when they emerged. The mediators were considered as problem solvers. In this role they are reactive providing solutions and supporting the *Executors* when they ask for help. In addition to support, the QH&SCs argue that they act as problem-solvers where Environmental Work is not a priority but included as an optional choice.

*Quality, Health and Safety Coach (QH&SC): "I coach them (referring to Site Managers). If they do not want to change, I cannot change them. I just provide some useful tips when they ask for it."*

The above statement reflects that this role is coping with high levels of stress. For this reason, this position has to be covered by individuals with expertise knowledge and construction experience. According to the Environmental Manager, the QH&SC's responsibility was split into two tasks: (1) Supporting the Regional Manager in the Business Development and (2) Coaching tasks with an active participation on site working in collaboration with the Site Managers.

Findings showed that environmental work was highly connected with the personal knowledge and information available during work execution. In fact, *Mediators* mostly performed as defenders of current practices. They filtered information and applied only the ones they considered useful. Interviews supported different and contradictory views of the Quality, Safety and Health Coach. The first view denied its formal environmental responsibility and saw them as purely a part of the environmental supportive staff. The second recognized their commitment and ability to come up with practical solutions, much due to their active participation on site. In addition, the Production Coach states a lack of awareness about their impact during the decisive steps of the process.

Therefore, a *Mediator* is classified as someone who solves problems and copes with unexpected issues. Their knowledge is based on technical issues as a priority rather than environmental knowledge. In their role, they are not aware of their impact as filters for the implementation of green strategy and unconsciously they do not realize the importance of their feedback to improve institutionalized practices so they mostly consider environmental issues as a quality issue which becomes an optional personal choice. Hence, these actors are not devoted to accept new practices until the main economic or efficient outcome is highlighted.

### **4.5.3 Executors (E)**

The main actors in this group are: Site Manager, Supervisors and Work force.

- *The Site managers* consider day-to-day practices as isolated project practice and have power and authority to carry out the project. In this case, each project was seen as an independent “*company*”. Environmental work was an administrative responsibility comprised in focused Environmental Goals and as a preventive work delegated into specific tasks to Supervisors on site.
- *Supervisors* were delegated to monitor the environmental work besides the production work. Environmental work is considered as different technical tasks such as sorting waste or controlling energy on site.
- *Work force* executes the construction tasks commanded by the Supervisors.

*Executors’* roles are less visible in the hierarchical organization and also with limited direct connections with the *Formulators* in the higher levels. Their main responsibility is to carry out the project in accordance with the Project Plan, completing projects on time, budget and quality. This role is under the line of command of the Project Manager for the administrative tasks preparing an arena for green implementation.

*Executors* need to cooperate closely with the Operational Production Coach (OPC) following the Production Plan, and with the Quality, Health and Safety Coach they establish optimal conditions on site. However, environmental information was communicated based on what Quality, Health and Safety Coach considered as part of the project’s environmental goals. Chosen solutions were the ones that did not interfere with productivity seen as the primary task on site. In fact, sometimes environmental work was considered an obstacle for the day-to-day routines on site. Some of the interviewees on site stated that they did not even know where to find the environmental specific environmental messages in writing.

On site employees stated that environmental work was reflected constantly by the application of the BASTA list (a system developed to identify hazardous materials in the Swedish construction sector), Building Supply Assessment, and other routines and templates. In addition, environmental practice was considered as the use of solar panels, eco friendly products, and environmental staff involvement in the processes. *Executors* were aware of the effect from small measures, as turning down the heating and lamps.

During the work execution, environmental information was communicated by informal channels and it became an applicable practice when the *executors* shared their personal understanding and when it did not interfere with the day-to-day practices of the production phase. Being green meant tailored solutions.

#### **4.5.4 Environmental Supporters (ES)**

The main actors of this group were: Environmental Manager and Environmental Coordinator.

- *The Environmental Manager* supported the upper levels such as *Formulators* in order to integrate the environmental issues as part of the business. In collaboration with Top Management (*Formulators*) they attempted to present environmental issues as a general concern of the organization.
- *The Environmental Coordinators* provided information to *Mediators* and *executors*. The main task for environmental coordinators were to share knowledge related to energy use and environmental issues in all the

organizational levels depending on the *Formulators*’, *Mediators*’ and *Executors*’ interests and needs.

In their role, they have the environmental knowledge and the willingness to support all the levels of the organization by sharing environmental information and knowledge, and thus creating a common understanding within the organization. In the level of *Mediators* and *Executors*, their environmental competence is driven mostly by profitability, productivity, and effectiveness concepts.

The *Environmental Supporters*’ hierarchical position was not clear, and the numbers of individuals in these positions was limited. For this reason, the environmental staff had to establish a mutual trust and informal communications paths to mediate environmental and communicate information to each level and in accordance with each and one’s needs.

## **4.6 Green Human agency in PEAB**

Classifying actors provided a clear understanding for the some alliances that actors have to integrate and communicate environmental practice in PEAB’s Western Division. This section presents alliances and facilitators carried out by some of the key actors previously classified as *Formulators (F)*, *Mediator (M)*, *Executors (E)* and *Environmental Supporters (ES)*. Findings show that a common characteristic among the facilitating actors was inter-organizational mobility.

### **4.6.1 Divisional facilitators**

For the Western Division the certification process encouraged and engaged all its members to act proactive. The certification processes was led by *Formulators* as the Divisional Manager, Development Manager and other *Mediators* actors (Production Coach, and Development Managers).

As a result, the Development Manager as one of the key players was promoted to Environmental Manager. Therefore this actor was able to initiate another kind of change: the green change. Key players, potential opportunities and strong ties were already identifying for green change implementation by the Development Manager. The Environmental Manager judged that the Western Division could work as an role model during the green change, acting as institutional entrepreneur organization in PEAB.

### **4.6.2 Regional facilitators**

During the on-going green change process the Regional Manager, as a coordinator for the Project Managers, provided tools such as instructions for the change implementation. Required tools were based on knowledge that were transformed into practical solutions and also supported by technical information. Planning action played a crucial role. During the early stages there was a need to understand and visualize project’s goal. For instance, in one of the Regional Divisions an organizational change has been taken place. The structure of this region has been changed to a non-hierarchal structure. This innovative organizational structure accentuates the importance of the role of the Project Management and involving them in the strategic board. This organization is led and coordinated by the Regional Manager, providing freedom to the five Project Managers (PM). In fact the application of this Strategic Ring was potential facilitators for the green change implementation.



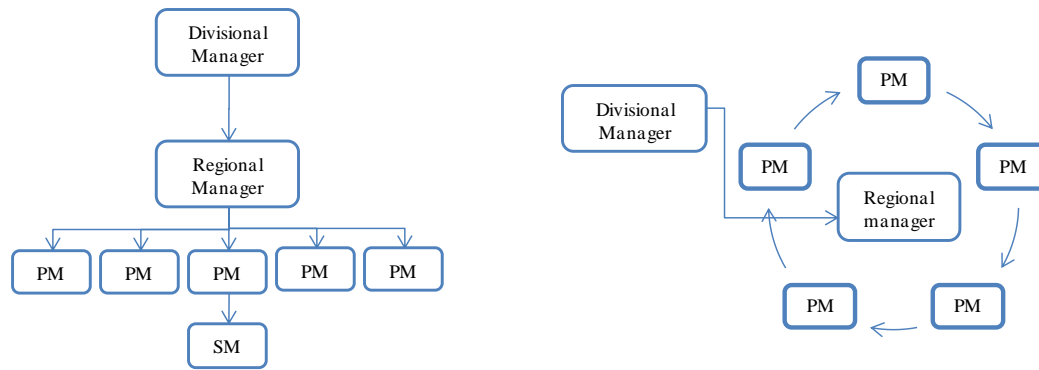


Figure 7 Formal organizational structure comparison with the Strategic Ring Board

An important characteristic of the Strategic Ring Board as an innovative organization is that it was led by a *Formulator* and supported by *Mediators*. Thus, actors in the Strategic Ring Board could identify opportunities and therefore, take the business as a new venture. According to the Regional Manager, the main purpose of this new organizational structure is to explore ways to renew the construction business. More, the organization is composed by a younger group in the construction sector (41-43 years).

### 4.6.3 Project facilitators

Owing to the Strategic Board Ring, each Project Manager (PM) contributed with their knowledge and experience, resulting in an independent way of working based on consensual decisions. The aim of the Strategic Ring Board was to obtain common agreement or evaluate the benefits or possible shortcomings during the crucial planning steps. This highlights the importance of knowledge when they came up with solutions that can be implemented in the day-to-day practices. Therefore, the implementation would be faster.

Findings support that the Project Managers were key players (*Mediators*) to implement change in PEAB. In addition, Project Managers are in a higher level than *Executors*. Hence, the involvement of the Project Manager is essential and this actor needs to be persuaded. Meaning that if they believe in strategies and decisions it will also be implemented. The main issues for the *Mediators* are time and profitability carried out by the *Executors*.

At the Project level, Project Managers would behave as institutional entrepreneurs if the financial outcome is highlighted. Therefore, to convince *Mediators* to behave as institutional entrepreneurs, the main motivator might be based on the financial result. Findings reveal that managerial imposition or innovative solutions are condemned to fail if they are imposed, and for this reason they act as institutional defenders.

## **5 Discussion**

### **5.1 The business of being green**

Green social dynamics encourage the creation of mutual trust and facilitate solutions regarding to what can be achieved with new practices. The findings highlighted that green aspects on site are highly connected to productivity. Therefore, the green human agency seeks to maintain the institutionalized practices such as the business plan and the short decision paths. Hence, PEAB's sustainability endeavours reflect the triple bottom line mentioned by Kolk (2000). Combining business issues with environmental issues will increase the green profile. Several authors have also pointed out the importance of integrating environmental issues as a part of business plan (eg. Kolk, 2000 and Reinhardt, 1999).

Reinhardt (1999) highlights the importance on investing in environmental issues much in other business investments. The Environmental Staff pointed out that Top Management should realize the amount of financial resources necessary for raising the green competence by training and educating employees. In fact, our findings emphasize that investing on training should be carried out in each organizational level. For PEAB sustainability is the most based on the economic factor. In line with Kolk's suggestion (2000) PEAB is trying to set compatibility between economic and environmental issues.

The research findings also show that green change implementation is done when Project Managers identify green processes that increase productivity and comprises monetary incentives. Since, productivity seems to be the most important goal to achieve on site the environmental work is otherwise not a priority. A crucial factor that modifies this is the creation of a common understanding among the site workers. The *Mediators* should support the change not only for short period of time but also maintain it over time. Social dynamics are needed to provide useful support and maintain the solutions applicable on site. At the end, environmental work is a personal choice and a shared responsibility based on collaboration. But still, its execution should be done in small steps, for achieving sustainable development.

### **5.2 Green Human Agency**

Battilana (2006) identifies that not all the members support and share the same characteristics to perform as institutional entrepreneurs. The application of human agency does not guarantee that all individuals qualify and share the same characteristic as institutional entrepreneurs (Battilana, 2006). During the research, three main issues were identified to illustrate the human agency, the first describes a human agency classification of actors who cope with environmental work, and the second one illustrates some tensions with their roles and finally it presents the most used facilitators to support green change in PEAB.

#### **5.2.1 Green human agency classification of actors**

The classification is done according to their involvement in change process and their access to the resources. Simultaneously in all the organizational levels, behaviors and social dynamics have to be modified. Studying the human agency in the social dynamics allows identifying actors that perform as filters.

Reinhardt (1999) suggests that integration of environmental issues is profitable just when individuals in organization take an active role related to business decisions. The *Mediators* are main actors who play filter roles and can transform into institutional entrepreneurs if they have a green competence for decision making. This fact supports the importance of the Project Manager for a green change. As such they can be transformed from being institutional defender towards being an institutional entrepreneur if they possess environmental information and education.

Project Managers need to identify what is the main outcome of the environmental practices. Findings recognized that Project Managers only supported solutions and develop tools in accordance to current requirements on site. Project Manager performs as an institutional entrepreneur in green change process when the benefits of environmental practices are personally understood and the financial incentive is connected with the human green agency.

Project Managers are the one in charge of convincing the *Executors*, integrating policies, education process, and methods. First, the Project Managers (*Mediators*) need to find out any monetary motivation in practices. The following step is to request the implementation to Site Managers (*Executors*). Project Manager acts as *defender* and *filter* when new strategies are not implemented due to their personal believes and poor understanding of the beneficial outcome. The Project Managers feel confident when projects are running in the way they are used to do it. Changes can affect its status quo and might affect productivity and effectiveness on site. For this reason, only useful changes are implemented.

The most important role on site is the Site Manager (*Executors*), who is the one that collaborates and sets possible alliances to carry the production tasks enclosing the environmental practice with other *Mediators* such as Quality, Health and Safety Coach (QH&SC) and Operational Production Coach. This alliance between the *Mediators* and *Executors* encloses technical production tasks. Therefore, the shared knowledge and information is only limited to improve technical process and not focused on environmental issues. Interviews pointed out that the *Mediators* are not responsible for implementing the environmental strategies.

In contrast, some actors with social positions act as a *filter*, due to the green practices are highly connected to the understanding of the environmental information and its application (Gluch, 2004). During the research, Production Coach and Quality and Working Environment Coach were eager to maintain in their status quo. They do not believe in environmental issues as their main priority or main responsibility. As a result, these actors felt frightened to change current practices. In this case, they act as institutional defenders and become filters.

## **5.2.2 The challenge: Communication between Mediators and Executors**

Gluch (2004) explains that environmental issues are evaluated and sorted out as what individuals judge to be realistic. She emphasized that information, tools and reasons have to match with the requirements on site as well as with legislations. Actors, who mediate environmental information, underestimate the importance of informal networks as an active and dynamic process for exchanging environmental practices. Innovative solutions are tailored in accordance to current situations by practical answers that might get lost in long path of the formal network. In contrast, informal networks enable the conditions for sharing environmental practices in all the

organizational levels and even outside the organization. Nevertheless these solutions are lost in the informal way as temporary solutions for specific projects. Therefore a balance of both networks should be used for mediating with the environmental practice. During the change process, *Formulators* therefore have to be open-minded for various chances to integrate feedback for continuous improvement.

The Project Manager disputes to know, why and how, therefore green change is going to occur. During change the critical issues is to obtain clear goals of the general overview, for this reason sources are allocated for its achievement. Owing to this, Project Managers and Site Managers are main players during the execution phase, having a close relation to each other.

### 5.2.3 Institutional entrepreneurs

Three strategic activities were identified as facilitators for green change; *the certification process in the Western region, the Strategic Ring Board, and the Environmental Supporters*.

Battilana (2007) states that the concept of institutional entrepreneurship is not only limited to individuals but also it can go further to organizations and institutions. In fact, the *Western Division certification process* worked as an institutional entrepreneur organization. Employees of the Western Division said that the *ISO 9001* certification process had played an important role to engage individuals and make them participate actively in the process. For instance, the change process supported by Divisional Manager, Regional Manager, and Development Manager, illustrated the importance of institutional entrepreneurs' alliances in certification process of the Western Division.

In *the Strategic Ring Board*, the Regional Managers acted as institutional entrepreneurs. The target was to convince Project Managers to perform independently by handling issues with their own working style and knowledge. It was based on encouraging Project Managers to change their role of *Mediators* to a more active and shared responsibility. This non-hierarchical organization was especially characterized by the relative low age of its members. The guiding commitment was comprised as they considered themselves as the "*the ones who are going to renew the construction business*". Hence, members of Strategic Ring in the West Region explored new opportunities for the organization.

Finally, *the Environmental Supporters*: The strong alliance among the Environmental Manager and the Top Management initiated the green change. According to Battilana's theory (2007), individuals in a high level of organizational hierarchy are more eager to initiate change in the whole organization. Therefore, conducting the green change is based on trustful communication and mutual support. However, ties with higher levels need to be strong and maintained. In addition, during the research individuals in all the organizational levels pointed out that they feel comfortable and enthusiastic for working with environmental issues. A crucial factor for increasing or sharing environmental knowledge was the fact that they experienced a relation with the Environmental Manager. In fact, they described the role as open minded with a challenging task and also willing to support them when it was required. Hence, it is considered as an enabler for collaboration and mutual support.

Findings also revealed that actors managing environmental work established specific facilitators based on the social dynamics. In this study, 50% of the interviewed actors

were new-comers in the organization. Based on their previous experiences from other organizations the more easily identified potential opportunities which also were spread to other construction sites in the entire organization. Consequently, they acted as institutional entrepreneurs, supporting Battilana's (2007) theories of institutional entrepreneurs as the ones who oversee the opportunities and simultaneously mobilize alliances to support the urgency of change. Interviews pointed out key positions such as Divisional Manager, Environmental Staff, and Development Managers as new-comer actors, and acting as institutional entrepreneurs. Inter-organizational mobility provides a wide combination of skills and qualifications to provided innovative solutions. Combining different backgrounds, balancing institutionalized practices and opportunities allows building competence between institutional entrepreneurs and institutional defenders.

### **5.3 Achieving a green change**

*Environmental supporters* have to act as institutional entrepreneurs for divergent organizational change by convincing institutional defenders who guard the exiting situation because of their benefit from present status (Battilana, 2009). The study has shown that institutional defenders act as filter to decrease the information and eliminate changed practices. Therefore, *Environmental supporters* need to present visions that motivate defenders to modify the existing situation and practice.

Divergent organizational change mostly occurs in organizations with strong and local markets and forces by powerful miscellaneous environment and institutional pressures (D'Aunno et al., 2000). PEAB as one of the main construction companies in Sweden and Scandinavia seeks to implement environmental issues in day-to-day practices. PEAB considers divergent organizational change, the process of environmental issues and environmental works implementation in all levels of the organization. The process of change implementation includes three main activities: (1) creating and developing a vision, (2) mobilizing individuals in the organization to pursue that vision, and (3) motivating them to reach and sustain that vision (Battilana et al., 2009).

The new vision for the institution or organizational field would be developed based on terms of the problems (diagnostic framing), presenting ideal for present situations (prognostic framing) and enforcement of constraining reasons (motivational framing) (Battilana et al., 2009). For instance, Environmental Managers and Development Managers in PEAB acted as institutional entrepreneurs when they developed the new vision for the company based on motivational framing not only during the Certification Process, the formulation goes further to the new green change.

The motivational frame includes the convincing reasons to support the implementation of new vision. To construct a suitable motivational frame, institutional entrepreneurs must gather the knowledge about the followers' interests and identify them in every organizational level. Therefore the vision provides the followers' necessities for change. Mobilizing the followers encompasses activities which assist to institutional entrepreneurs to achieve others' support and approval for new structures. According to the vision creation process in PEAB, Top Management requested that the Environmental Manager involved the environmental issues and practices during the vision creation process and it is worded in the Business Plan.

Findings agreed with the theoretical frame of the institutional entrepreneurs' importance for gathering information. The information is about the main motivations

for individuals to create a vision which the followers can understand, accept and finally implement. During the on-going process of change, institutional entrepreneurs need access to the higher levels of control rather than individuals who are not going to implement change. For the change process, institutional entrepreneurs should modify the existing practices and create a vision which the followers can understand, approve, and finally pursue it (Battilana et al., 2009). In order to implement the green change in all levels of organization, Top Management encourages the main institutional entrepreneurs (Divisional Manager, Regional Manager and Environmental Manager) to have more access to resources through the social organizational structure. In addition, institutional entrepreneurs in new key positions can develop new strategies and visions based on the environmental issues.

Findings reveal a gap of connections between *Environmental Supporters* and the *Mediators* as problem-solver actors (Production Coach and the Quality, Health and Safety Coach). Hence, environmental information and training should therefore focus on the impact of these actors for rising up the environmental issues to day-to-day practices. Training and educations can be a first step to change previous stated mindset. Moreover, the supportive role of Production Coach and the Quality, Health and Safety Coach can act as a bridge between Project Manager and Site Manager (*Formulators and Executors*). Therefore the possible mismatch between the environmental work on paper and on action may be eliminated

Institutional entrepreneurs need to identify potential players involved in the divergent organizational change process, such as protagonists, antagonists and alliance with other main actors. Findings and theoretical frame recognized the importance of identifying local institutional entrepreneurs and their social dynamics in all the organizational levels. For instance, the social dynamics established between Development Manager, Environmental Staff, Operational Production Coach, and Quality and the Quality, Health and Safety Coach in Projects and Regions improve the process of mediating with green change practices. Thus in order to implement green change successfully, Environmental Staff in PEAB should expand their social dynamics and connections.

Institutional entrepreneurs can be successful in divergent organizational change process by building motivational frames and visions. They can create the visions by means of “*rhetorical strategies*” (Battilana, 2009). Based on rhetorical strategies, institutional entrepreneurs can combine innovations with the common templates to explain the necessity of building a green competence for PEAB, i.e. create common understanding about green knowledge.

The Environmental Staff has to develop a common vocabulary for different actors with different backgrounds, incentives, and environmental knowledge for the whole organization to explain the sustainability and environmental work aligning the Business and Project Plan goals. To achieve a complete green engagement in all organizational levels, a common vocabulary should be developed in order to “*achieve a common understanding for why things are doing like this!*”

. To sum up, the *Mediators* can act as a filter by building boundaries and rejecting the change because this position has the access to the sources and simultaneously they are the messengers of the higher levels to the lower levels on the organization for the change. Owing to this, its involvement in the early stages for formulating the plan is essential for matching the real project needs with the Business Plans.

## 5.4 Summing up the Human Agency and change in PEAB

All in all the discussion, for PEAB green change is highly influenced by: customer's requirements, competitors and legislation. The external demands are comprised in the Business Plan. Creating a vision is carried out by the *Formulators*. The reasons for the change are communicated through formal networks. However its implementation is highly connected with the support of the informal networks. Mobilizing resources is done by the line of command in accordance of the *Formulators, Mediators, Executors* and *Environmental Supporters'* interest. Therefore, how environmental work is communicated is dependent on the balance between formal and informal networks.

The research classifies the Western Division in PEAB as an institutional entrepreneur organization, because it includes individuals eager to contribute with changes in the entire organization. Recently, the division obtained the *ISO 9001-2000* certification for the Quality Management System. This certification is the sum of the efforts of several engaged institutional entrepreneurs. This result exemplifies the effort of working together to achieve a common goal. The identified key players were the Divisional Manager, Development Manager and Operational Production Coach.

Indeed, the organization can be described as decentralized and it follows a flat structure to communicate environmental issues. Meanwhile, the informal networks influenced by social dynamics ease to communicate environmental issues.. Current environmental practices, pointed out that information is mostly communicated and exchanged by informal networks. The actors' classification highlighted how roles as *Mediators, Executors* and *Environmental supporters* constantly work to cope with different environmental work trade-offs and the importance of the informal networks in this process. Moreover, the on-going green change implementation depends on the integration of *Mediators* and *Executors* roles during the process of green change as filters or enablers.

During the research, the process of change was tracked. The actor's role classification and their involvement allowed to identify and track the Green Human Agency (*see section 5.2 Green Human Agency*). The first step of the change was when the Top Management realized the reasons for the change, thus the creation of a clear vision should be encompassed in the General Business Plan. Hence, the Environmental work is part of it. The implementation is highly connected with the way environmental goals are communicated in each organizational level. Then after, the Environmental Goals in each project is converted into a specific Project Plan, commanded by the Project Manager who can act as filter or enabler (*see section 5.2.2 Communication between Mediators and Executors* ). For this reason, some actors developed their own informal networks, tools and goals, helping the *environmental supporters* to achieve the green change (*see section 5.2.3 Institutional entrepreneurs*). Owing to this, it is mostly at this level common sense needs to be highlighted.

During the process of change, the main duty of the *Environmental Supporters* is to align the long and short term goals of PEAB and with the project goals. As the Environmental Staff pointed out, the common understanding provides a general overview for sustainability and the business on it (*see section 5.3 Achieving the green change*). If the implementation takes place, the likelihood of building a green competence based on their employees competence is taken for granted as a day-to-practice. Environmental knowledge is included in decision making and therefore the completion of increasing a green profile is a constant process.

## 6 Testing the model

Analyzing actors' roles, responsibilities, formal and informal connections for mediating with environmental practices, allowed focusing on tensions among the *Formulators* and *Environmental supporters* with the *Mediators* and *Executors* in PEAB. Field observations, interviews and theoretical frame were used in order to test the model. Parameters were established in section 5.2.1 *Green human agency Actors' classification*, where the actors' roles were categorized according to their involvement in the change process.

Battilana (2006) developed "*The Enabling Role of Individuals*" model consisting six propositions, where proposition 2, 3, 4 and 5 were tested. Owing to this the results strive to observe the social position importance rather than the hierarchical role.

Figure 8 unfolds PEAB's organizational structure and illustrates the allocation of the four propositions granted in chapter 1.2. The chart presents the hierarchical line of command (formal network), the informal networks by thickest lines and show the role positions that affect the green change.

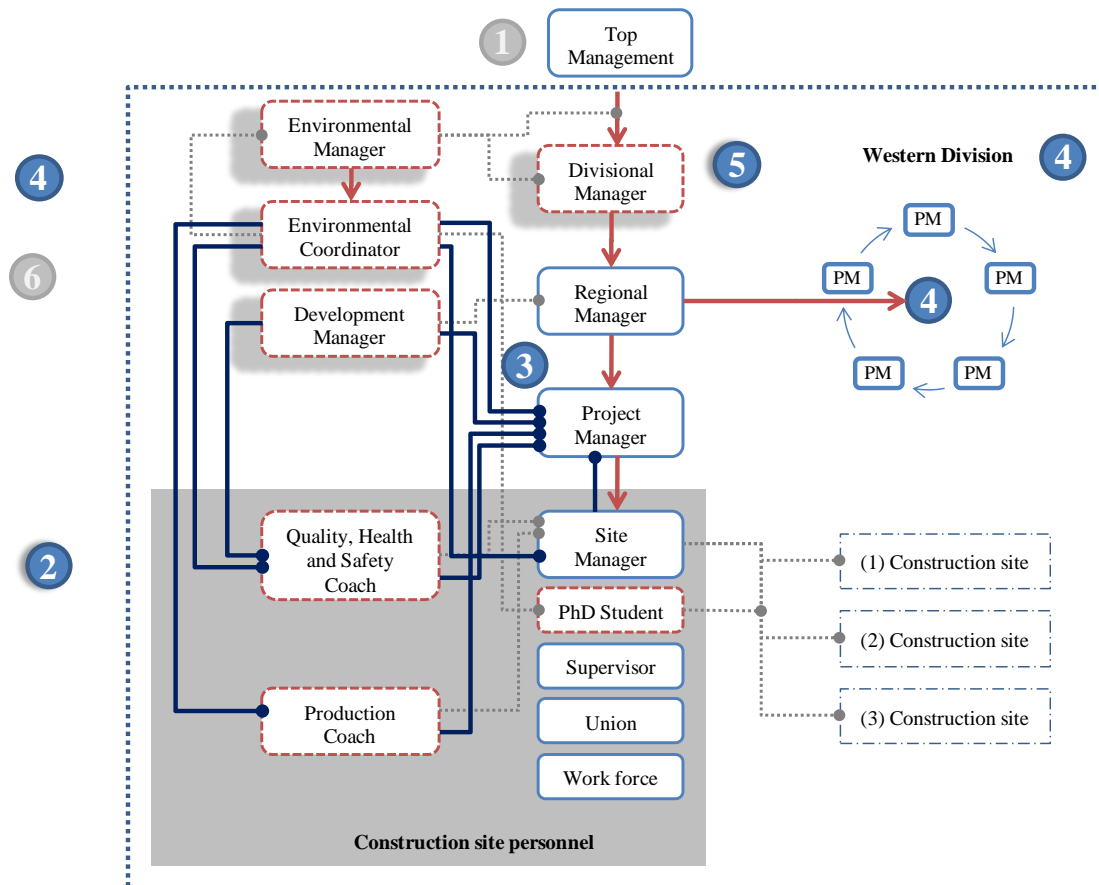


Figure 8 Testing the model in PEAB



The tested Propositions and results are:

- Proposition 2.

*Individuals who belong to lower social status are more eager to initiate the change depending on their degree of dissatisfaction, rather than the individuals with higher social status.*

Middle managers, classified as *Mediators* (Project Managers, Quality, Health and Safety Coach, and Operational Production Coach) support the current practices in their own level. Even if, they are in a position to initiate the change they prefer to conserve current practices in order to not affect the production processes. For this study, these actors are also considered to be in a lower hierarchical level, because their involvement in strategy formulation is low. However they highly influence a green change process since they highly control the execution process and thus can mobilize sources to implement change. Change rejection is done when the environmental practice is considered as extra works that affect the production task and is not integrated as a daily practices.

If *Mediators* perceive that made changes might affect the profit, for example leading to delays, increased costs and lower quality, they do not prefer to initiate change and they protect their status quo since productivity is their main target. Hence, *Mediators* would only implement green change when it is clear that it improves the production process and monetary results.

To sum up, based on the multi-level approach, the research considers Project Manager as actors in a lower level of the hierarchical structure. Findings reveals that they only work as institutional entrepreneurs when; (1) It involves an economic benefit, (2) the outcome of the change is based on what to them seems to be realistic, (3) they possess environmental information applicable to the day-to-day practices and thus do not affect the production processes and efficiency, (4) It is formulated in accordance with existing need on site.

For these reasons: *Proposition 2 is –Not proved valid–*

- Proposition 3.

*Individuals with lower social position are more likely to conduct the change if they have strong ties with individual of higher social position.*

Informal networks seem to be a promissory way to communicate environmental work and to strengthen social dynamics which already are presented as a fast and reliable communication way to exchange environmental information. The analysis presented a tension gap between the *Environmental Supporters* and *Mediators*. If these ties are strengthened by education and training, *Mediators* will start acting as institutional entrepreneurs supporting the change by integrating environmental work in the day-to-day practices. In fact, *Environmental Supporters* have to identify and integrate the reasons to support the change in each level.

Examples of lower-higher social ties in this study that can be improved for mediating environmental issues are as the following:

Considering the Environmental Coordinator as the higher social level they may communicate with

- (1) Project Manager when applying new environmental techniques in projects
- (2) Site Manager when integrating environmental work in the production process
- (3) Quality, Health and Safety Coach when applying specific solutions and for a more active participation during the construction phases not only limited to a problem solver, and strengthening the competence to support development plans
- (4) Production Coach for raising the importance and involvement of their role during the projects execution

In short, strong ties between lower- higher levels enable conditions not only to support green change but also to maintain it as a day-to-day practice.

For these reasons: *Proposition 3 is –Valid-*

- *Proposition 4:*

*Individuals with higher organizational hierarchy are good enablers to conduct the change, due to their willingness and access to resources.*

The study has identified three facilitators which act as institutional entrepreneurs in higher social position in the organization: Divisional Manager, Regional Managers and Environmental Managers.

The *ISO 9001-2000* Certification for Western Division is the outcome of institutional alliances to transform this Division as a role model in the whole PEAB in the integration of environmental work in the Business Plan. In this process the Divisional Manager had a significant role as facilitator. Another example is the Strategic Ring Board which illustrates the relation among the Regional Manager and the Project Managers as change agents. Developing a decentralized structure, in organization constructs a promissory way to implement the change for the *Mediators*. And finally, the *Environmental Supporters* realized the importance of establishing strong ties with all the organizational levels to achieve green change.

For these reasons: *Proposition 4 is –Valid-*

- *Proposition 5:*

*The individuals with higher inter-organizational mobility are more likely to conduct the change.*

Many of the actors involved in the green change process were new-comers into the organization. They strongly believe in creating new opportunities by breaking up traditional roles. Actors such as the Environmental Manager, Divisional Manager, and Development Manager were mainly responsible for creating strategies and visions. Another example was carried out by the Environmental Coordinator who as a key actor for providing a general understanding to the *Formulators, Mediators* and *Executors*. These actors exemplified inter-organizational mobility in the organization. Battilana described institutional Entrepreneurs as agents who initiate divergent

changes by breaking the institutional status quo in a field of activity. Therefore individuals with higher inter-mobility can be institutional entrepreneurs.

For these reasons: *Proposition 5 is –Valid–*

## 7 Conclusions

During this research, the importance of human agency was highlighted. Hence, Institutional entrepreneurs are not only presented as a promissory way to implement divergent organizational change but also motivate and perform as role model. The actors' classification concluded that social dynamics among the Project Managers, Site Managers and Production Coaches, Quality, Health and Safety Coaches are potential field of improvement in the organization. Simultaneously in all the organizational levels, behaviors and social dynamics based on this classification have to be modified.

By studying their social position and field characteristics we can draw up two interesting conclusions. Firstly, inter-organizational mobility seems to be a crucial factor that helps to identify opportunities and persuades institutionalized practices to be changed and/or modified. Secondly, a common understanding seems to be a crucial factor to mediate environmental issues. As a result, Environmental Staff as institutional entrepreneurs should communicate environmental work as a clear and visible practice that illustrates that PEAB is efficient and eco-friendly company.

Finally the Environmental Staff should be open-minded to cope with the mismatches among the organizational structure and the social dynamics enhancing informal networks as the most useful tool for mediating green change. The environmental knowledge should be carried out with a feedback about what is applicable or not on site, avoiding ambiguous messages in both formal and informal networks.

As a result, the Environmental Staff needs to reach all organizational levels by connecting the socio-emotional interactions in the day- to- day practices for carrying out during environmental work. A change of mindset is required for walking on the sustainability path. For PEAB the journey to sustainability is taken as an engagement with a shared responsibility. Focusing on the actors who act as filters a change of mindset from "*an unknown responsibility towards a shared responsibility*" is required based on employees' reflection of "*what is my contribution?*"

## 8 Reflection on the research processes

Language was a main barrier in our research. Nevertheless, this research is the outcome of tracking the maps and connections developed by our interviewees. Data sources are always available. The challenge for the researchers is to come up with the most suitable tool. In our case, the guidance of our supervisor allowed to find the best tool to gather information, being the maps the richest and interesting part in our thesis.

Testing a model in a highly mature organization, made us reflect on the impact of the presence of a strongest leadership in PEAB that affects all the organizational surroundings. As a result, the DDRP model summarizes what PEAB stands for, and how these core values guide and support the employees' performance. Hence, we came up with the reflection that the DDRP is one of the most useful tools to communicate and in a clear way PEAB's endeavors for raising its environmental profile. For employees the DDRP model is to keep things simple, therefore green change should follow this simplicity principle also.

During the research process, we discuss about other characteristics that might affect individuals to act as institutional entrepreneurs.

The application of the Strategic Ring Board as a facilitator of green change, helped to inquire if the average of age is also determinative to act as institutional entrepreneur. Should age also be considered as important as social position, role and inter-mobility characteristics? Or it is only a resulting characteristic of a generational way of green way of thinking?

Supportive roles that promote green change also presented a peculiar characteristic related to gender. Individuals in roles as Environmental Manager, Environmental Coordinator, Site Manager and Quality, Health and Safety were women. Hence, related to this finding, we reflect on the next question is being green a female issue? Why women seem to be more motivated in exploration of new green strategies, when in the meanwhile men seem to be more defensive?

Finally, this research does not try to make controversy on the effects of age or gender in the implementation of green strategies. Nevertheless these characteristics can be used as complementary information in some aspects not considered in the human agency, which for this study was only limited in the impact of individuals shaping organizations.

## 9 References

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## **10 Appendix**

### **10.1 Classifying actors and indentifying potential institutional entrepreneurs**

Each interview consisted on four parts and intended to be as dynamic as possible following the semi-structured methodology. Described *in section 2.2.4 Interviews*

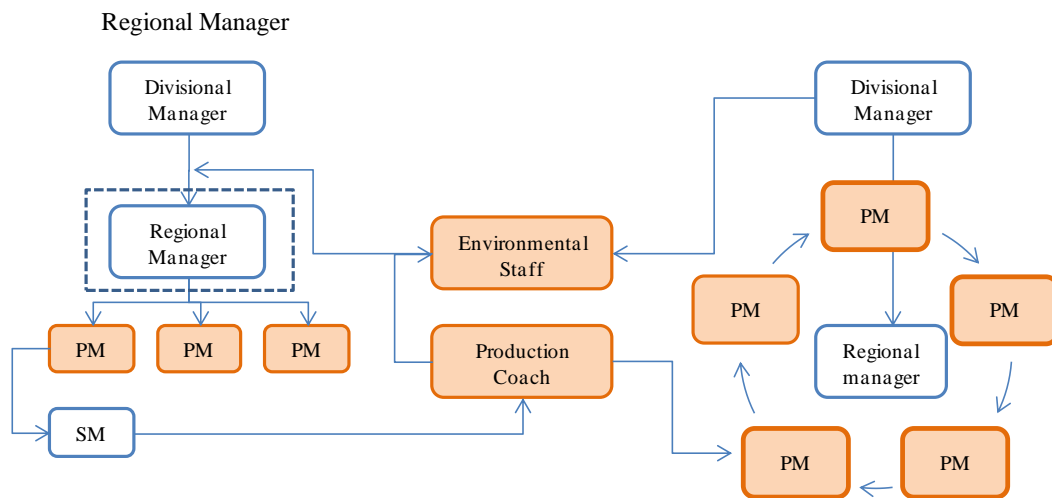
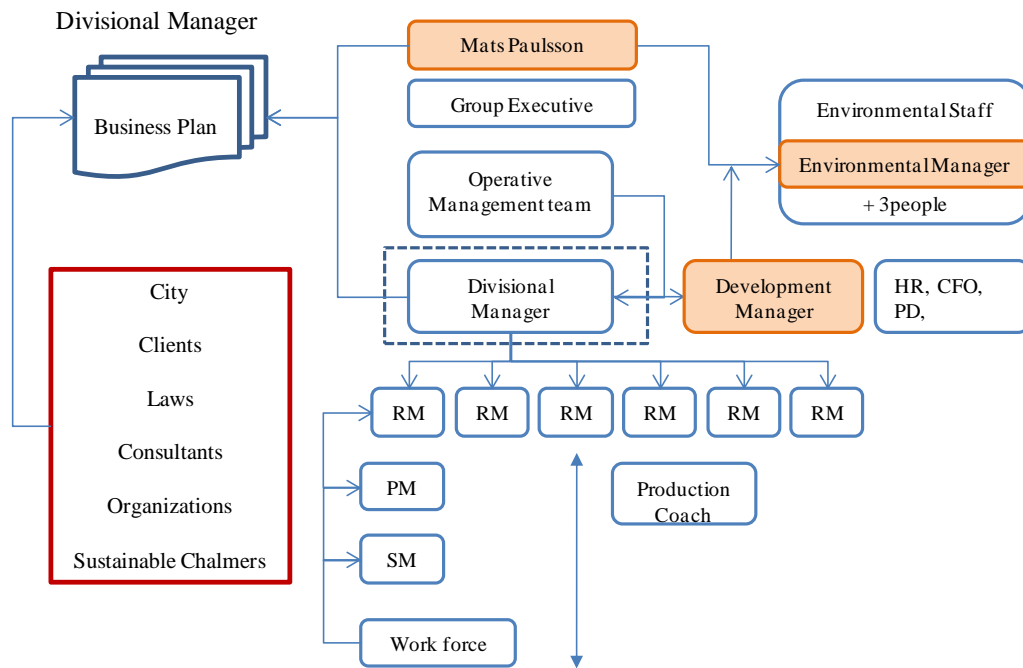
- Part one: Interviewees' background
- Part two: Contribution to sustainable development
- Part three: Drawing a map of their social interactions for environmental work
- Part four: Role description and human agency

### **10.2 Compiled drawings made during interviews**

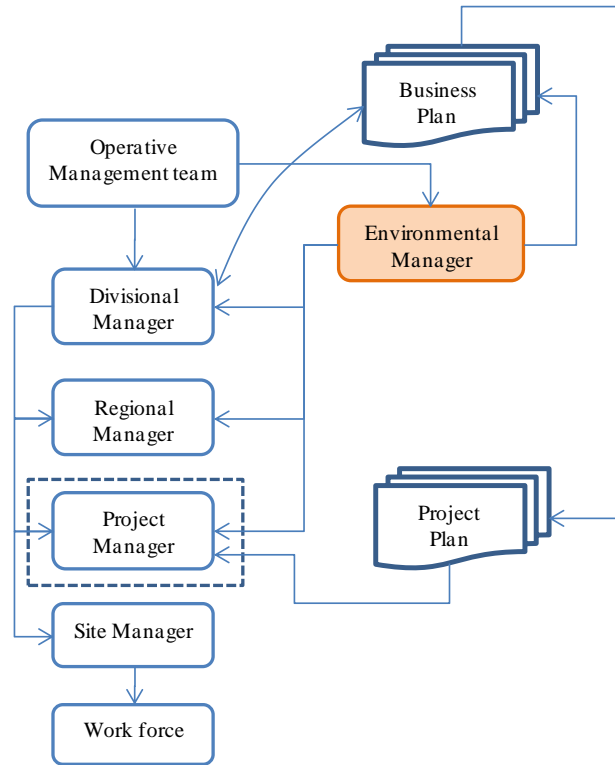
The drawings for the part three of the interview are presented in four categories in accordance actors' role classification in:

- Tracking the environmental work
- Preparing the environmental work
- Executing the environmental work
- Supporting the environmental work

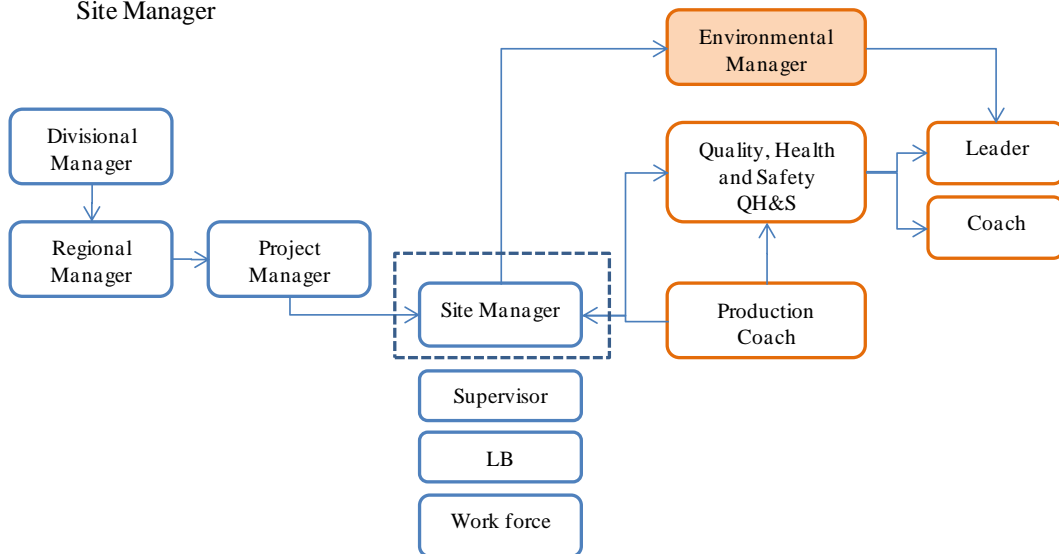
## 10.2.1 Tracking the environmental work



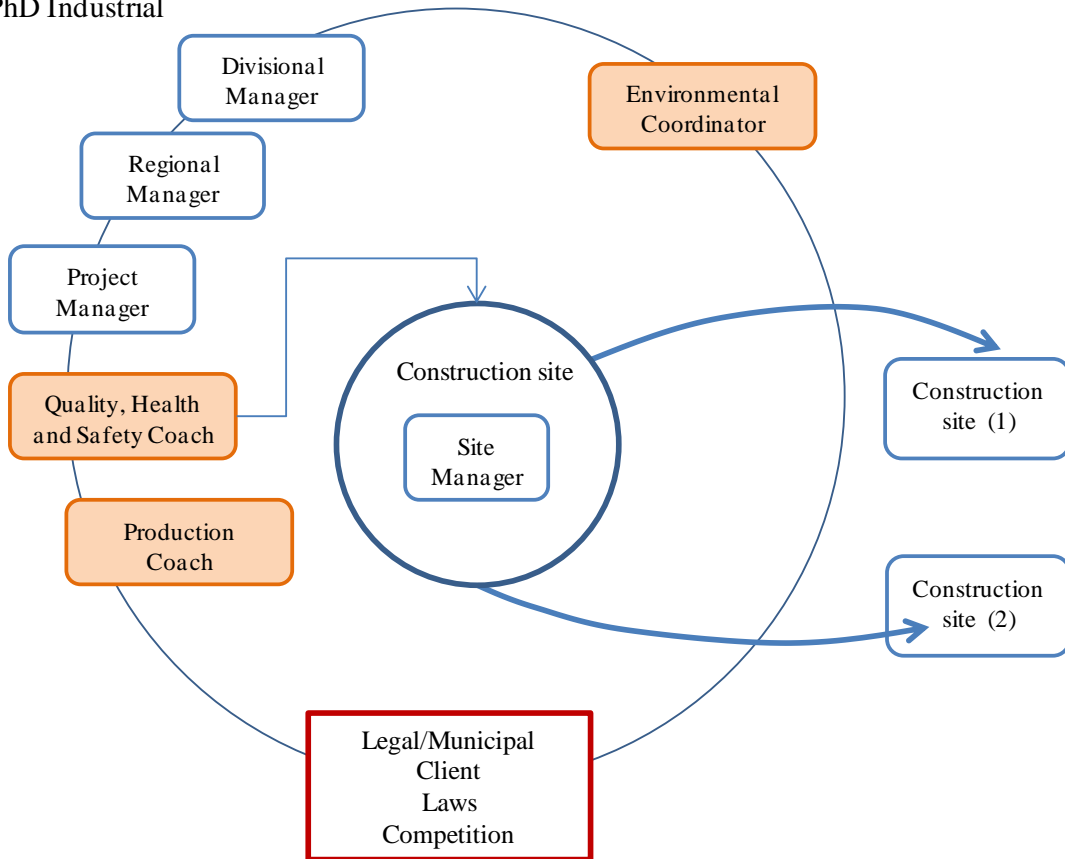
Project Manager



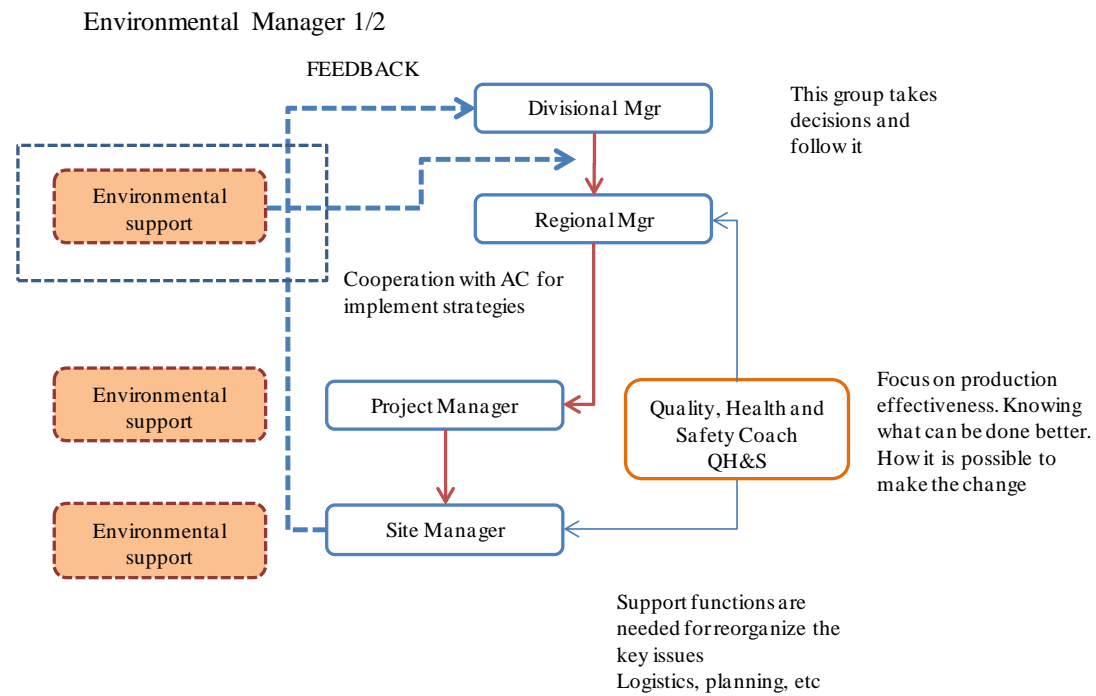
Site Manager



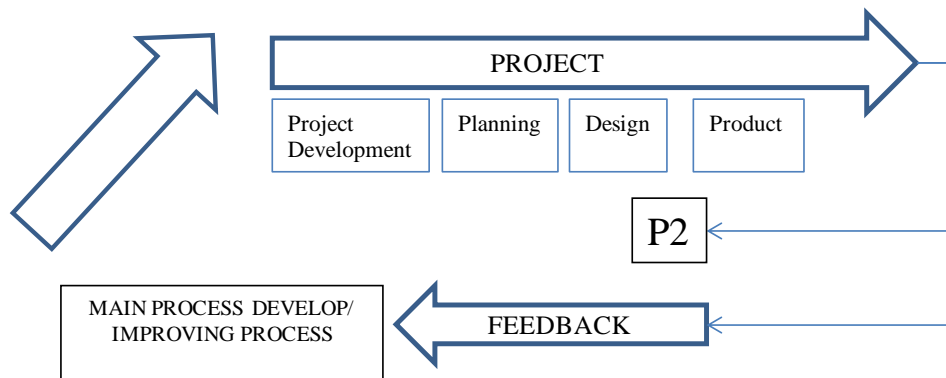
PhD Industrial



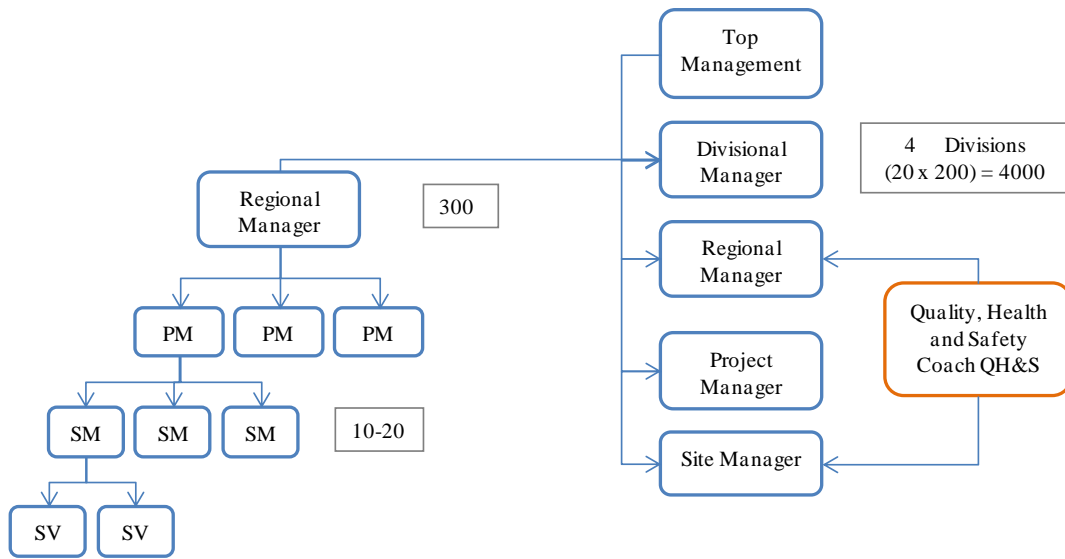
## 10.2.2 Preparing the environmental work



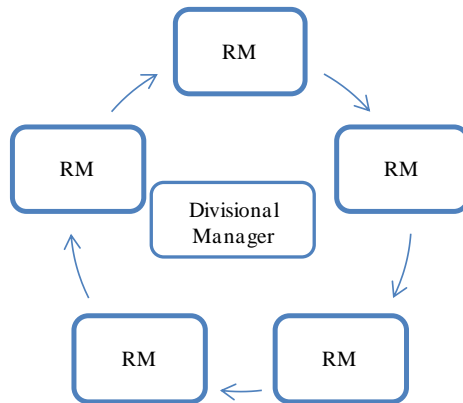
Environmental Manager 2/2



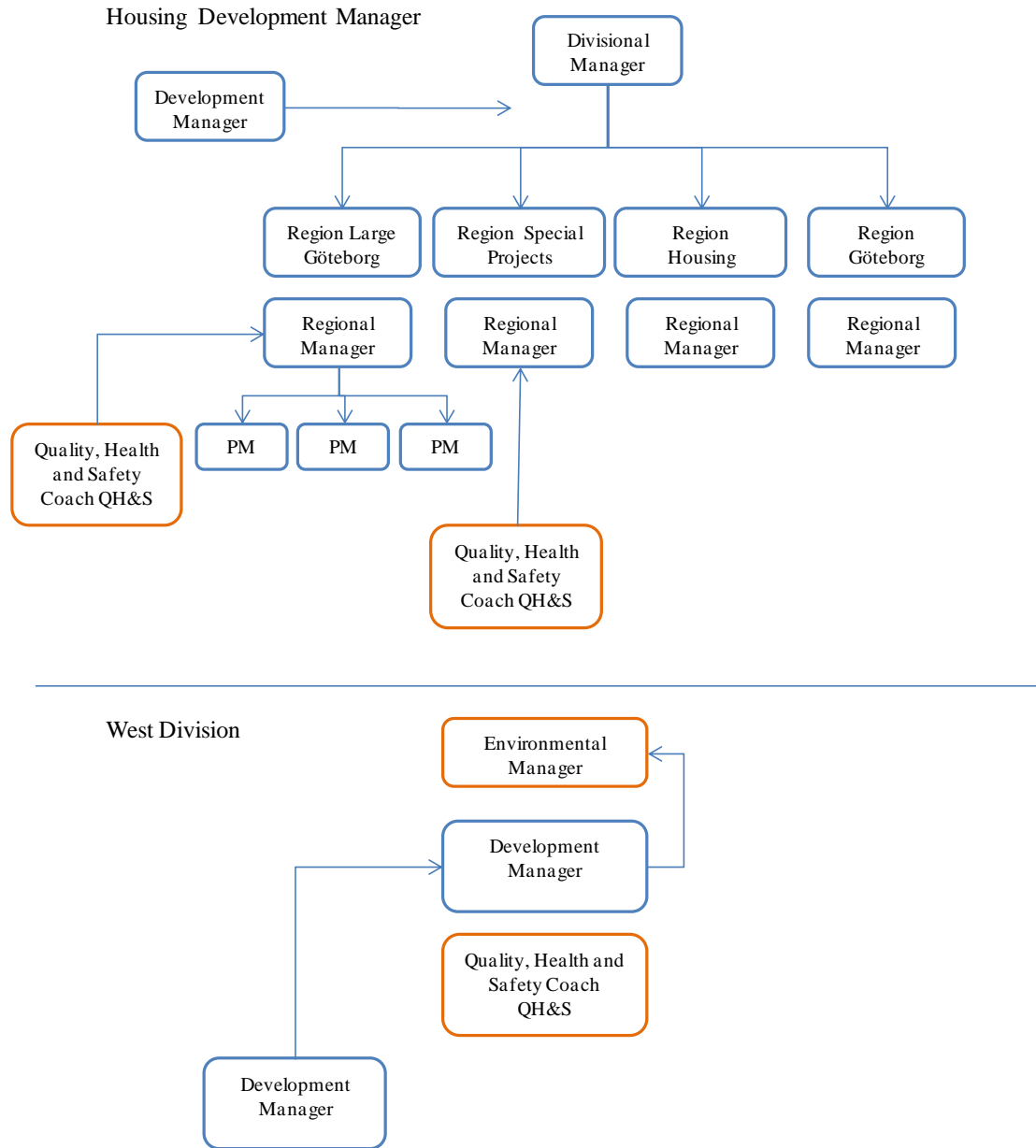
Development Manager



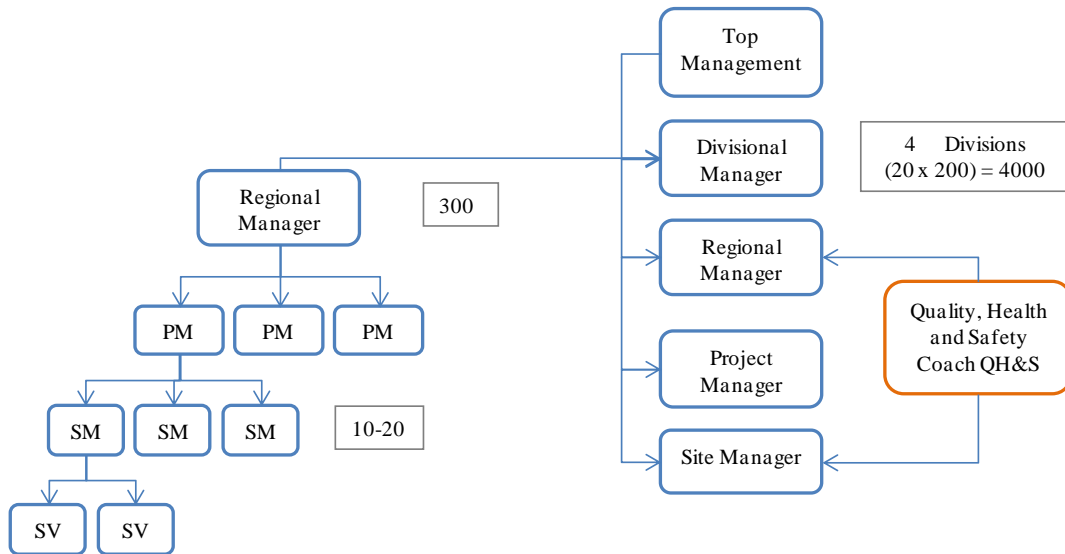
West Division



### 10.2.3 Executing the environmental work



## 10.2.4 Supporting the environmental work



West Division

